



Bryant Planning Commission Meeting
Monday, November 13th, 2017
6:00 p.m.
Boswell Municipal Complex - City Hall Courtroom

Agenda

CALL TO ORDER

- Chairman to call the meeting to order.
- Secretary calls roll

APPROVAL OF MINUTES

Minutes

Documents:

[Bryant Planning Commission Meeting Minutes 10917.pdf](#)

ANNOUNCEMENTS

DRC REPORT

- **Zips Car Wash - Formerly Ultimate Car Wash - 1900 North Reynolds Road**
Requesting Sign Permit Application Approval - **Approved**

Documents:

[zips bryant \(1\).pdf](#)
[Bryant permit app \(1\).pdf](#)

- **The Heights At Waverly**

Eric Richardson - Requesting Rezoning of Property - **Recommend Approval**

- **Salvation Army - 22000 I-30**

Requesting Sign Permit Approval - **Approved**

Documents:

[Salvation Army Sign Permit App.pdf](#)

- **Pikewood Subdivision Lot 73R And 74R**

Jeff Porter - Conditional Use Permit for Duplexes - **Approved**

- **Kensington Place Subdivision**

Vernon Williams

1. Requesting Final Plat Approval for Phase 1 - **Recommend Approval**

2. Requesting Preliminary Plat Approval for Phase 2 - **Recommend Approval**

. **Hill Farm Barn**

Chris Treat - Requesting Site Plan Revision to include fence - **Approved**

. **Bryant Junior High School**

Josh Minton - Requesting Preliminary Facility Approval to Allow for Grading - **Approved**

Documents:

[BJHS Site Plan.pdf](#)

. **Big Red - 1524 South Reynolds Road**

Jimmy Parker - Requesting Sign Permit Applications Approval - **Approved**

Documents:

[Big Red Sign App 1524 Reynolds.pdf](#)
[Valero 25.pdf](#)

. **Absolute Essence**

Tim Hendrix - Requesting Conditional Use Permit for Property Located at 9416 Highway 5 North - **No Action Taken**

. **Oriental Cuisine**

Eric Warford - Requesting Site Plan Approval - **Approved**

Documents:

[O C Building Plan.pdf](#)
[China to Go_Site Plan_102017.pdf](#)

. **Planning & Community Development Department**

1. Master Transportation Plan Update - **Recommend Approval**
2. Bryant Parkway Access Management - **Recommend Approval**
3. Zoning Code Changes - **Recommend Approval**

OLD BUSINESS

. **Spin-Off**

Requesting Approval of Preliminary Concept Plan

Documents:

[Spin Off South Concept Plan.pdf](#)
[2017_11_09_Spin-Off Concept Plan Cover Letter.pdf](#)
[2017_11_09_Spin-Off AHTD Approved Access Plan.pdf](#)

NEW BUSINESS

. **Kensington Place Subdivision**

Vernon Williams

1. Requesting Final Plat Approval of Phase 1
2. Requesting Preliminary Plat Approval of Phase 2

Documents:

[Kensington Place Phase 2 Preliminary Plat.pdf](#)
[Kensington Place Phase 1 Final Plat.pdf](#)

. **Hurricane Storage**

Bud and Stuart Finley - Requesting Site Plan Approval

Documents:

[Hurricane Storage Application.pdf](#)
[PC SUBMITTAL PLANS.pdf](#)
[ADEQ DOCS.pdf](#)
[DETENTION CALCS.pdf](#)

. **First Shot**

Requesting Site Plan Approval

Documents:

[Range, floor plan.pdf](#)
[Range, Master Plan.PC9.pdf](#)
[SITE PLAN 11-01-17.pdf](#)
[First Shot Application.pdf](#)

PUBLIC HEARING

. **Pikewood Subdivision Lot 73R And 74R**

Jeff Porter - Conditional Use Permit for Duplex's

Documents:

[Jeff Porter - Pikewood Examples.pdf](#)
[Jeff Porter - CU Pikewood Lots 73R and 74R App.pdf](#)
[Pikewood Subdivision Lot 73R.pdf](#)
[Pikewood Subdivision Lot 74R.pdf](#)

. **The Heights At Waverly**

Eric Richardson - Requesting Rezoning of property from R-E to R-2

Documents:

[Heights Sht 2.pdf](#)
[Hieghts Waverly Rezoning App.pdf](#)

. **Absolute Essence**

Tim Hendrix - Requesting Conditional Use Permit for Property located at 9416 Highway 5 North.

Documents:

[Absolute Essence Conditional Use Application.pdf](#)

. **Planning & Community Development Department**

1. Master Transportation Plan Update
2. Bryant Parkway Access Management Plan

3. Zoning Code Changes

Documents:

[WalkBIKEDrive - MSP10.26.2017.pdf](#)
[WalkBIKEDrive - BPP10.26.2017.pdf](#)
[Bryant Parkway AM Plan 10.26.2017.pdf](#)

. **REQUESTED TO BE ADD TO THE AGENDA**

. . **Hurricane Gardens**

Requesting Final Plat Approval

Documents:

[Hurricane Gardens Final Plat App.pdf](#)
[Phase 1 Hurricane Gardens Final Plat.pdf](#)

ADJOURNMENT



Bryant Planning Commission Meeting
Monday, November 13th, 2017
6:00 p.m.
Boswell Municipal Complex-City Hall Courtroom

UNAPPROVED MINTUES FOR 10/9/17 MEETING
3 Pages

CALL TO ORDER:

- Chairman Lance Penfield Calls Meeting To Order
- Commissioners Present: Brunt, Johnson, Erwin, Burgess, Penfield, Poe, Statton, Mayfield.

APPROVAL OF MINTUES:

Approval of the September 11th, 2017 Planning Commission Minutes.

Action taken: Motion made to approve by Commissioner Johnson and seconded by Commissioner Brunt. Voice vote: 8 yeas and 0 nay. Passed

DRC REPORT

Chairman Penfield reads the DRC Report.

Springhill Fire Station

Vernon Williams - Requesting Conditional Use Permit For Fire Station - **Recommend Approval**

Spin-Off

Requesting Approval of Preliminary Concept Plan - **Recommend Approval**

4824 Snooks Lane, 7717 & 7729 Highway 5 Rezoning

Jonathan Hope - Requesting Rezoning of 4824 Snooks Lane, 7717 & 7729 Highway 5. Rezoning from C-1 and R-E to C-2. - **Recommend Approval**

North Shobe Rezoning

Jake Goheen - Requesting Re-Zoning of Property on North Shobe Road. Going From R-E to C-2. - **Recommend Approval**

Natural State Of Kind - 23111 I-30

Jason Martin - Requesting Conditional Use Permit - **No Action Taken**

Bragg And Kennedy Homes

Requesting Sing Permit Application Approval - **Denied - Off Premise Sign**

Fieldstone Duplex

Johnathan Hope - Requesting Final Plat Approval For Fieldstone Duplex - **Recommend Approval**

PUBLIC HEARING

Springhill Fire Station

Vernon Williams - Requesting Conditional Use Permit For Fire Station

Chairman Penfield Calls for a roll call vote. 8 yeas and 0 nay. Passed.

North Shobe Rezoning

Jake Goheen - Requesting Re-Zoning of Property on North Shobe Road. Going From R-E to C-2.

Chairman Penfield Calls for a roll call vote. 8 yeas and 0 nay. Passed.

4824 Snooks Lane, 7717 & 7729 Highway 5 Rezoning

Jonathan Hope - Requesting Rezoning of 4824 Snooks Lane, 7717 & 7729 Highway 5.

Vice-Chairman Erwin Calls for a roll call vote. 7 yeas and 0 nay, Chairman Penfield Abstains. Passed.

Natural State Of Kind - 23111 I-30 - REMOVED

~~Jason Martin - Requesting Conditional Use Permit - Has Been Removed At Request of Applicant~~

NEW BUSINESS

Spin-Off

Requesting Approval of Preliminary Concept Plan

Motion to table by Commissioner Mayfield, second by Commissioner Brunt. 8 yeas and 0 nay. Tabled.

Fieldstone Duplex

Johnathan Hope - Requesting Final Plat Approval For Fieldstone Duplex

Chairman Penfield Calls for a roll call vote with a contingency on the project that it be reapproved by DRC with the completion of ditches and roadway. 8 yeas and 0 nay. Passed.

REQUESTED TO BE ADD TO THE AGENDA

Bryant Family Pharmacy
Bryant Family Pharmacy - Requesting Site Plan Approval

Commission Johnson makes a motion to add to agenda, Commissioner Mayfield seconds. Chairman Penfield Calls for a roll call vote. 8 yeas and 0 nay. Passed.

Planning & Community Development Department

James Walden - Zoning Code Changes

Chairman Penfield Calls for a roll call vote. 8 yeas and 0 nay. Passed.

ADJOURNMENT

Motion made to adjourn by Commissioner Burgess, seconded by Commissioner Statton.

Approval of the minutes for October, 9th Bryant Planning Commission meeting was approved on November, 13th, 2017.

_____ Date: _____2017
Chairman Lance Penfield

_____ Date: _____2017
Secretary Truett Smith



EXTERIOR PERSPECTIVE PHOTOS ZIPS Car Wash 1900 N. Reynolds Rd. Bryant, Ar





EXISTING Pan Face NOT TO SCALE



Replacement Pan Face NOT TO SCALE



Replacement Pan Face NOT TO SCALE

Main Id

ZIPS Car Wash 1900 N. Reynolds Rd. Bryant, Ar

NOT TO SCALE





EXISTING Channel letters NOT TO SCALE



Replacement Flex Face NOT TO SCALE



Replacement Flex Face NOT TO SCALE

Building Sign

Zips Carwash 1900 N. Reynolds Rd. Bryant, Ar.

NOT TO SCALE



Applicants are advise
form. The Sign Ordir

Site plan showing pl
rendering of sign sh
application. Additio

10/1/17

City of Bryant, Arkansas
 Code Enforcement, Permits and Inspections
 312 Roya Lane
 Bryant, Ar 72022
 501-943-0943

SIGN PERMIT APPLICATION

Applicants are advised to read the sign ordinance prior to completing and signing this form. The Sign Ordinance is available at www.cityofbryant.com

Site plan showing placement of sign and any existing signs on the property. A rendering of sign showing correct dimensions of all signs are required with application. Additional documentation may be required by Sign Administrator.

Date: 10/04/17

Note: Electrical permits may be Required, Please contact the Permits Office at 501-943-0943 for more information.

SIGN CO. OR SIGN OWNER

Name Conway Sign
 Address 740 S. German Lane
 City, State, Zip Conway, AR 72034
 Phone 501-327-4166
 Alternate Phone _____

PROPERTY OWNER

Name FRAN-DELTO Luigi's
 Address 22000 I-30
 City, State, Zip Bryant, AR 72022
 Phone 501-847-1110
 Alternate Phone _____

GENERAL DETAILS

Name of Business Salvation Army
 Address/Location of sign 22000 I-30
 Sign dimensions (height, length, width) 3.5' tall x 3.5'
 Zoning Classification _____ Aggregate Surface Area (total all signs) _____

SIGN TYPE

Pole Monument
 Wall Other
 Total sq. ft. 12 sq. ft.
Existing moving to Existing pole

Height of sign from lot surface: Bottom 8' Top 11'

READ CAREFULLY BEFORE SIGNING

I, Nicole Tidmore do hereby certify that all information contained within this application is true and correct. I fully understand the terms of the Sign Ordinance supersede the Sign Administrator's approval and that all signs must fully comply with all terms of the Sign Ordinance regardless of approval. I further certify that the proposed sign is authorized by the owner of the property and that I am authorized by the property owner to make this application. I understand that no sign may be placed in any public right of way. I understand that I must comply with all Building and Electrical Codes and that it is my responsibility to obtain all necessary permits.

Applicant's Signature [Signature] Date 10/04/17

Sign Administrator(or Designee) Approval _____ Date _____

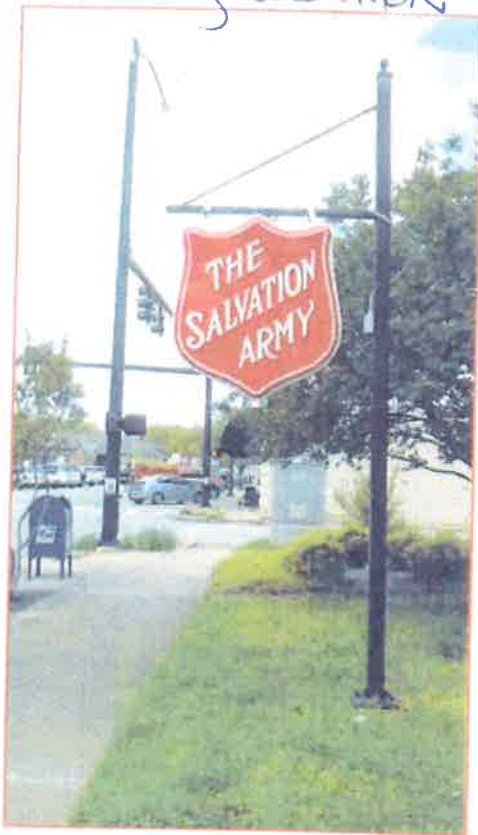
PROOF

Relocate from Pole Sign in Benton to Sign in Bryant

Add New Pole in Middle to Hang Sign
Artwork shows 3.5" Tall x 96" Wide Pole,
Existing Poles 6" Wide
Measured Distance from Between Existing Poles is 96" Wide (Used to Scale)

New location

Existing location



Artwork Shows:
3.5" tall x 96" wide pole

6" wide poles

1/10th scale

COLORS SHOWN ON PROOF - SCREEN VERSUS PRODUCTION MAY VARY.

ALL ARTWORK IS THE PROPERTY OF LITTLE ROCK SIGN CONWAY SIGN CO. REPRODUCTION OF THIS PROPRIETARY ARTWORK WITHOUT WRITTEN CONSENT IS ILLEGAL.

Client: Salvation Army (Bryant)
File Name: Salvation Army_Pole Sign-Relocation to Bryant COMPai
Date: 4/14/17
Sales: Nicole Artist: Anna

SIGNATURE REQUIRED FOR APPROVAL TO PROCEED WITH ORDER & PRODUCTION

Approved

**LITTLE ROCK SIGN
CONWAY SIGN**
1.501.327.4166

22000 I-30



City of Bryant, Arkansas
Code Enforcement, Permits and Inspections
312 Roya Lane
Bryant, Ar 72022
501-943-0943

SIGN PERMIT APPLICATION

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Site plan showing placement of sign and any existing signs on the property. A rendering of sign showing correct dimensions of all signs are required with application. Additional documentation may be required by Sign Administrator.

Date: 10/04/17

Note: Electrical permits may be Required, Please contact the Permits Office at 501-943-0943 for more information.

SIGN CO. OR
SIGN OWNER

Name URConway Sign
Address 740 S. German W.
City, State, Zip CONWAY, AR 72034
Phone 501-327-4166
Alternate Phone _____

PROPERTY OWNER

Name FRAN'S DIEGO LUIGI'S
Address 22000 I-30
City, State, Zip Bryant AR 72022
Phone 501-847-1110
Alternate Phone _____

GENERAL DETAILS

Name of Business SALVATION ARMY
Address/Location of sign 22000 I-30
Sign dimensions (height, length, width) 18" TALL x 188.5"
Zoning Classification _____

SIGN TYPE

Pole Monument
 Wall
 Other (type) _____
Total sq. ft. 24 sq. ft.

Aggregate Surface Area (total all signs) _____

Height of sign from lot surface: Bottom _____ Top _____

READ CAREFULLY BEFORE SIGNING

I, Nicole Tidmore, do hereby certify that all information contained within this application is true and correct. I fully understand that the terms of the Sign Ordinance supersede the Sign Administrator's approval and that all signs must fully comply with all terms of the Sign Ordinance regardless of approval. I further certify that the proposed sign is authorized by the owner of the property and that I am authorized by the property owner to make this application. I understand that no sign may be placed in any public right of way. I understand that I must comply with all Building and Electrical Codes and that it is my responsibility to obtain all necessary permits.

Nicole Tidmore 10/04/17
Applicant's Signature Date Sign Administrator (or Designee) Approval Date

CRamsey@cityof
Bryant.com

PROOF



New Channel Letters to Be Installed

SERVICE CENTER 18"

188.5"

Illuminated Channel Letters on a Raceway
18" Tall Letters, 188.5" Wide (Overall)
White Plex Faces, White Trim Cap & Returns
Raceway Color To Match Building (Color TBD)

COLORS SHOWN ON PROOF / SCREEN VERSUS PRODUCTION MAY VARY.

ALL ARTWORK IS THE PROPERTY OF
LITTLE ROCK SIGN CONWAY SIGN CO.
REPRODUCTION OF THIS PROPRIETARY
ARTWORK WITHOUT WRITTEN
CONSENT IS ILLEGAL.

Client: Salvation Army (Bryant)
File Name: Salvation Army_Bryant Building COMPai
Date: 6/22/17
Sales: Nicole Artist: Anna

SIGNATURE REQUIRED
FOR APPROVAL TO PROCEED
WITH ORDER & PRODUCTION

Approved

LITTLE ROCK SIGN
CONWAY SIGN
1.501.327.4166

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Date: 9-27-2017

Note: Electrical permits may be Required, Please contact the Permits Office at 501-943-0943 for more information.

SIGN CO. OR
SIGN OWNER

Name Custom Advertising
Address 23478 I-30
City, State, Zip Bryant AR 72022
Phone 501.847.1000
Alternate Phone 501.209.2307

PROPERTY OWNER

Name Sumnerwood Petroleum
Address 1311 N. Reynolds
City, State, Zip Bryant AR 72022
Phone 501.847.7964
Alternate Phone _____

GENERAL DETAILS

Name of Business Big Red/Valero
Address/Location of sign 1524 S. Reynolds
Sign dimensions (height, length, width) 3'x6'x1'
Zoning Classification C

SIGN TYPE

Pole Monument
 Wall
 Other (type) _____
Total sq. ft. 18

Aggregate Surface Area (total all signs) 159
Height of sign from lot surface: Bottom 15' Top 18'

READ CAREFULLY BEFORE SIGNING

I, Jimmy Parker, do hereby certify that all information contained within this application is true and correct. I fully understand that the terms of the Sign Ordinance supersede the Sign Administrator's approval and that all signs must fully comply with all terms of the Sign Ordinance regardless of approval. I further certify that the proposed sign is authorized by the owner of the property and that I am authorized by the property owner to make this application. I understand that no sign may be placed in any public right of way. I understand that I must comply with all Building and Electrical Codes and that it is my responsibility to obtain all necessary permits.

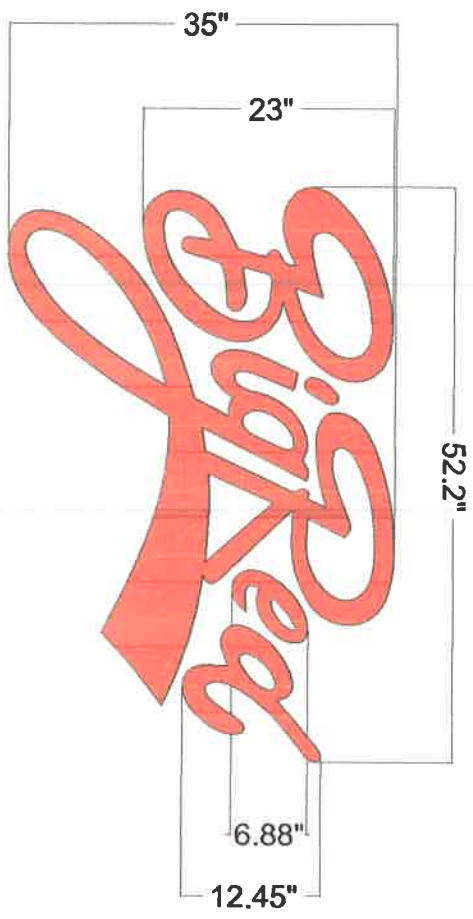
Applicant's Signature [Signature] Date 9/27/17 Sign Administrator(or Designee) Approval _____ Date _____

***Note 2 sets
(P2-5)**

28625 HARVEST VIEW ROAD
STOUTLAND MO 65567
PHONE 800-544-6381
FAX 417-286-3350
E-MAIL GRAPHICS@SIGNFAB.COM

THIS PROOF DRAWING IS FOR YOUR REVIEW AND APPROVAL BEFORE FABRICATION BEGINS. SIGNED APPROVAL INDICATES THAT YOU HAVE READ AND APPROVE OF THE SPECIFICATIONS STATED. SIGN FAB WILL NOT BE RESPONSIBLE FOR ERRORS THAT COULD HAVE BEEN PREVENTED BY THE PROPER REVIEW OF THIS FORM. THANK YOU.

Note:
This is a 12v DC System. Do Not plug
secondary Leads into the 120V AC.



Specs: Two sets performed channel letters w/ plex faces and LED's - remote.

Face: 2793 red plex.

Trim: 3/4" red.

Return: 5" pre-finished hunter red / Interiors white.

Illumination: Principal Fusion 2 series red LED's - PL-FS2-RD1-P.

Transformers: Principal PL-60-12-U 120-277VAC - remote.

UL Specs: UL Listed w/ UL Labels.

Drain Holes: Yes.

Electrical Holes: Yes - pre-wired w/ 5' leads & snap in bushings.

Mounting Holes: Yes - nutserts.

Mounting Pattern: Yes.

Hardware: 1/4" x 6" all threads.

Job #:	195522	Approved By:	<i>W. Moore</i>	Date:	<i>8/24/17</i>
Project:	Big Red	SIGNED APPROVAL OF ALL DRAWINGS MUST BE RECEIVED BEFORE PRODUCTION BEGINS.			
Client:	Samuel Shilts	Date:	8/23/17	Notes/Changes:	
CE 48140 CO 7536					

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Code Enforcement, Permits and Inspections
312 Roya Lane
Bryant, Ar 72022
501-943-0943

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Date: 9-27-2017

Note: Electrical permits may be Required, Please contact the Permits Office at 501-943-0943 for more information.

SIGN CO. OR
SIGN OWNER

Name Custom Advertising

Address 23478 I-30

City, State, Zip Bryant, AR 72022

Phone 501.847.1000

Alternate Phone 501.209.7307

PROPERTY OWNER

Name Summerwood Petroleum

Address 1511 N. Reynolds Rd.

City, State, Zip Bryant, AR 72022

Phone 501.847.7964

Alternate Phone _____

GENERAL DETAILS

Name of Business Big Red/Valero

Address/Location of sign 1524 S. Reynolds

Sign dimensions (height, length, width) 20' x 6' x 1'

Zoning Classification C Aggregate Surface Area (total all signs) 138 sq Ft

Height of sign from lot surface: Bottom 15 Top 35

SIGN TYPE

Pole Monument

Wall

Other (type) _____

Total sq. ft. 120

READ CAREFULLY BEFORE SIGNING

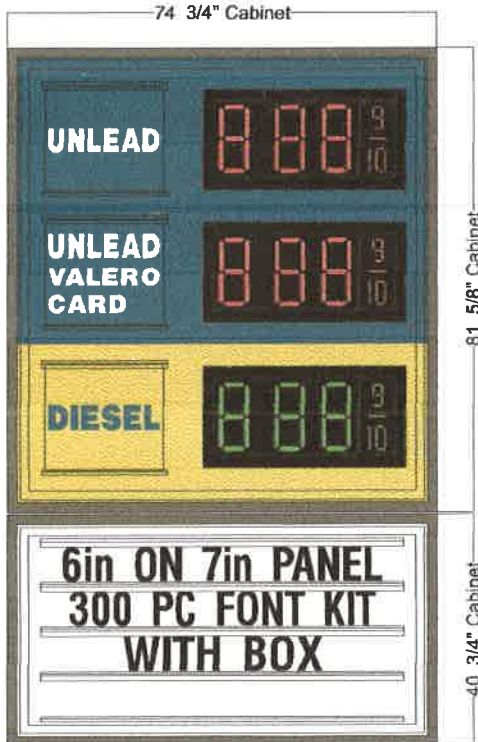
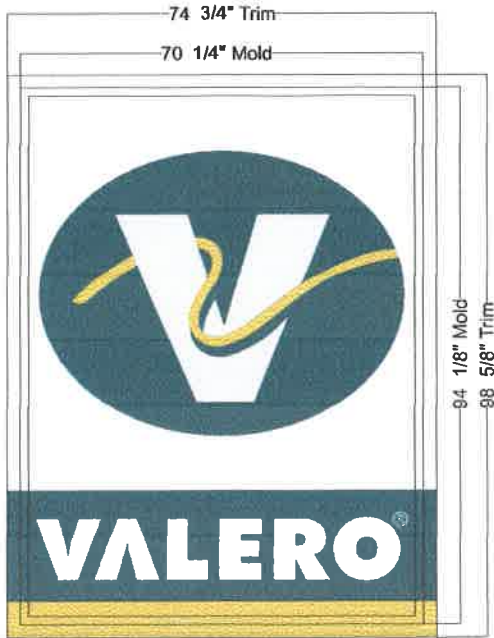
Jimmy Parker, do hereby certify that all information contained within this application is true and correct. I fully understand that the terms of the Sign Ordinance supersede the Sign Administrator's approval and that all signs must fully comply with all terms of the Sign Ordinance regardless of approval. I further certify that the proposed sign is authorized by the owner of the property and that I am authorized by the property owner to make this application. I understand that no sign may be placed in any public right of way. I understand that I must comply with all Building and Electrical Codes and that it is my responsibility to obtain all necessary permits.

Applicant's Signature

Date

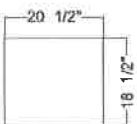
Sign Administrator(or Designee) Approval

Date



35'

2 Big Red campy
 logo
 1/25/17
 8/22/17
 Approved
 via Email



Site - Drawing #: 27554 Dwg 59009
 Date: 8/22/17
 Project: Valero



www.alveysigns.com
 13100 Highway 57 N.
 Evansville, IN

Valero ID faces.
 Price sign with product panels: Unlead, Unlead Valero Card,
 Diesel (LED's by others).
 Big Red faces only
 Changeable reader cabinet.

City of Bryant, Arkansas
Code Enforcement, Permits and Inspections
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Bryant, Ar 72022
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Date: 9-27-2017

Note: Electrical permits may be Required, Please contact the Permits Office at 501-943-0943 for more information.

SIGN CO. OR
SIGN OWNER

Name Custom Advertising
Address 23478 I-30
City, State, Zip Bryant AR 72022
Phone 501-847-1000
Alternate Phone 501-209-2307

PROPERTY OWNER

Name Summerwood Petroleum
Address 1511 N. Reynolds Rd
City, State, Zip Bryant AR 72022
Phone 501-847-7964
Alternate Phone _____

GENERAL DETAILS

Name of Business Big Red/valero
Address/Location of sign 1524 S. Reynolds
Sign dimensions (height, length, width) 2' x 10' x 6"
Zoning Classification C

SIGN TYPE

Pole Monument
 Wall
 Other (type) canopy
Total sq. ft. _____

Aggregate Surface Area (total all signs) 158
Height of sign from lot surface: Bottom 18 Top 20

READ CAREFULLY BEFORE SIGNING

I, Jimmy Parker, do hereby certify that all information contained within this application is true and correct. I fully understand that the terms of the Sign Ordinance supersede the Sign Administrator's approval and that all signs must fully comply with all terms of the Sign Ordinance regardless of approval. I further certify that the proposed sign is authorized by the owner of the property and that I am authorized by the property owner to make this application. I understand that no sign may be placed in any public right of way. I understand that I must comply with all Building and Electrical Codes and that it is my responsibility to obtain all necessary permits.

Applicant's Signature [Signature] Date 9/27/2017
Sign Administrator(or Designee) Approval _____ Date _____

Valero

Valero

Street

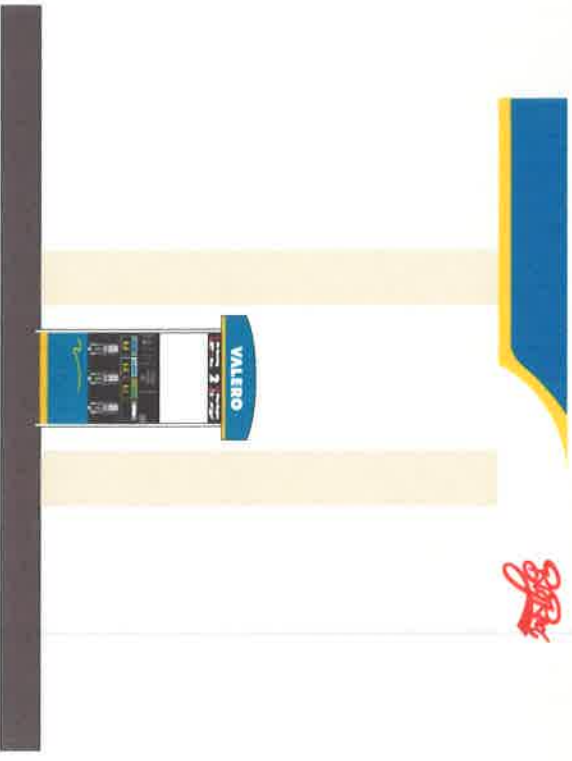
Store
1001

VALERO

V

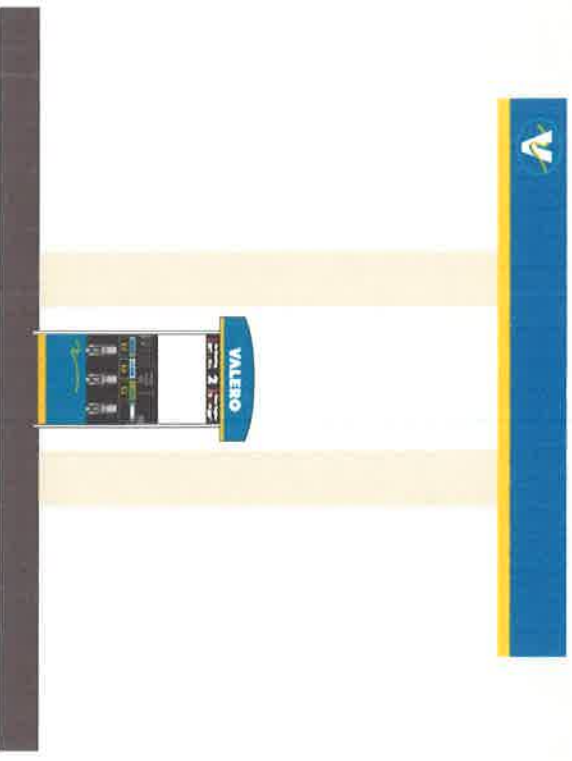
1001

Toward Store



Toward Street

Toward Street



Toward Store



VALERO

Express

74 3/4" Cabinet



VALERO®

UNLEAD 8.88 ⁹/₁₀

UNLEAD VALERO CARD 8.88 ⁹/₁₀

DIESEL 8.88 ⁹/₁₀



6in ON 7in PANEL
300 PC FONT KIT
WITH BOX

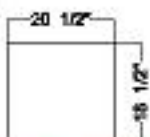
98 5/8" Cabinet

81 5/8" Cabinet

33 1/4" Cab

33 1/4" Cab

25' 0"



Site - Drawing - #:
Dwg 53122

Date: **2/9/16** Project: **Valero**

Requested By: **Kim** Drawing By: **Dann**



www.alwaysigns.com
 13100 Highway 57 N.
 Evansville, IN
 1-888-426-9397
 (812) 867-2567 ph.
 (812) 867-1465 fax

Notes - Scope of Work
 Custom 6' Flag style. LED's by others

THIS DESIGN IS THE ORIGINAL AND UNPUBLISHED WORK OF ALWAYS SIGN COMPANY AND IS OR EXHIBIT IN ANY MANNER WITHOUT WRITTEN CONSENT FROM AN ALWAYS SIGN COMPANY REPRESENTATIVE.

MARK ALDERFER
- ARCHITECT -

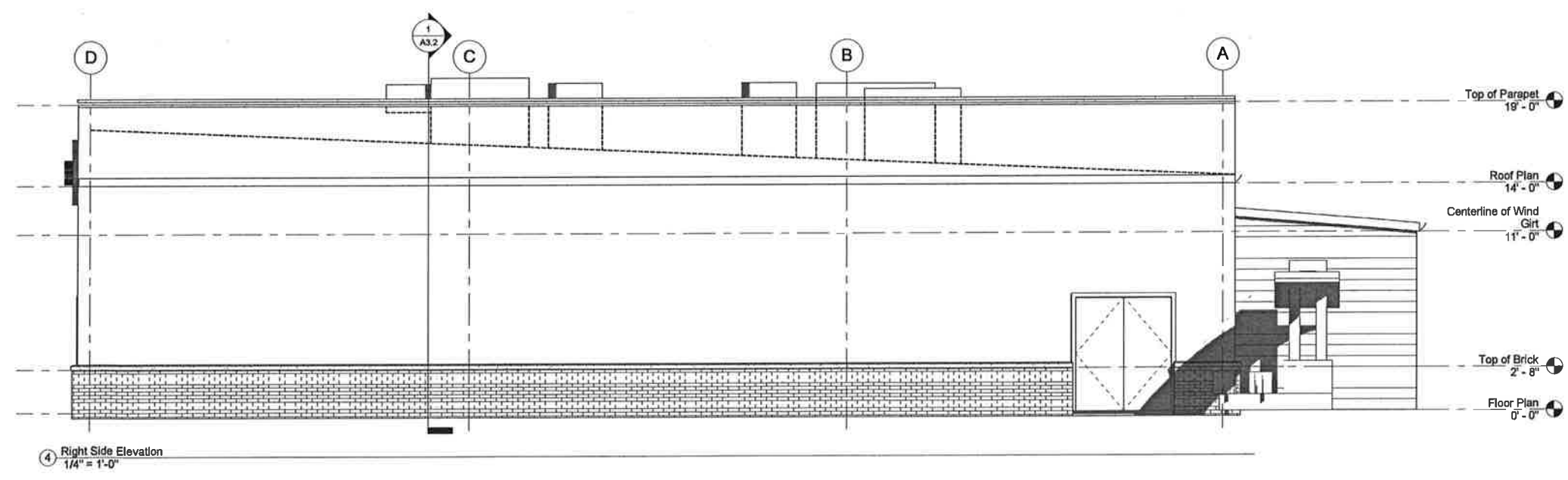
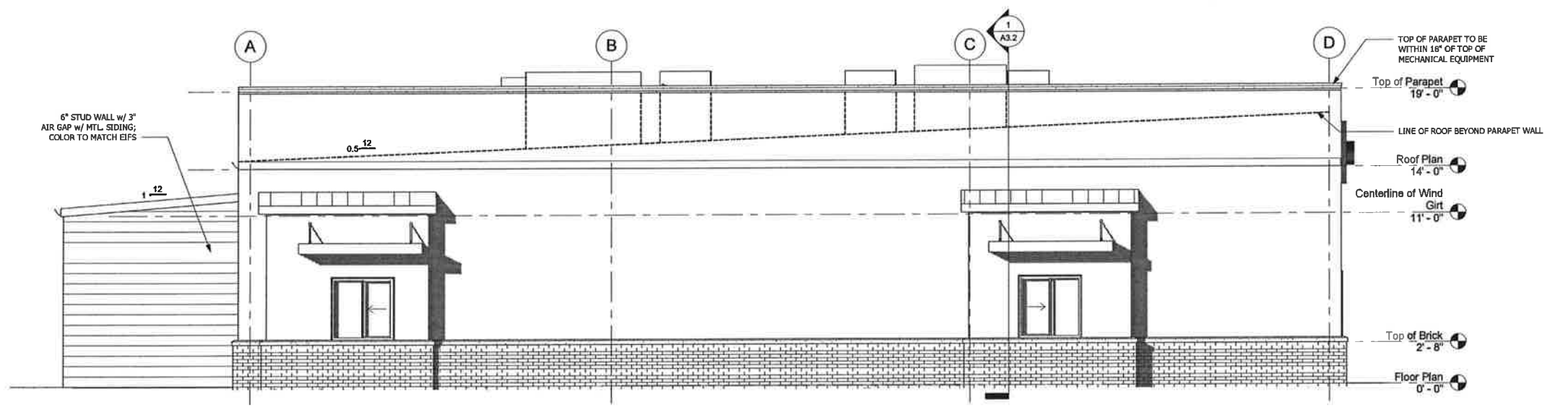
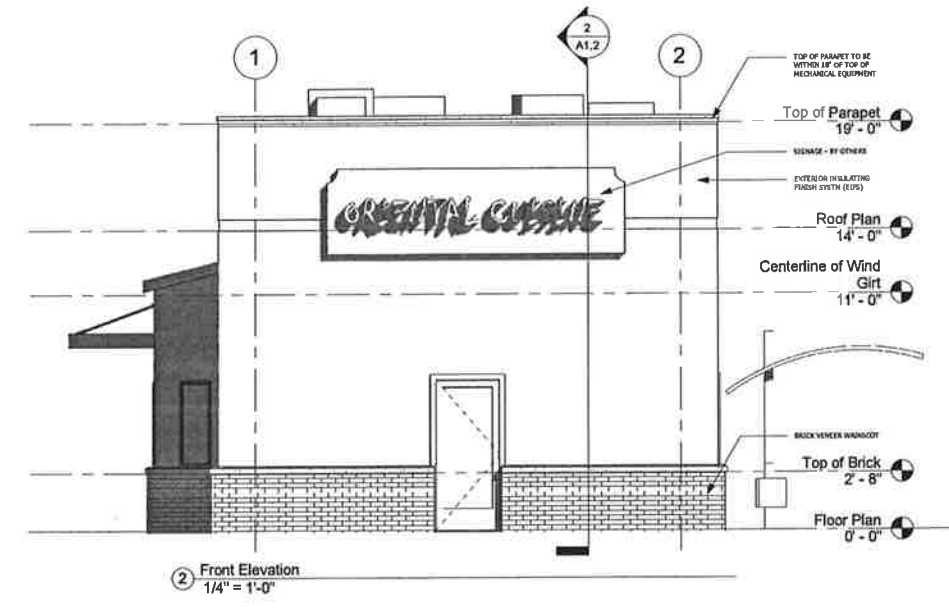
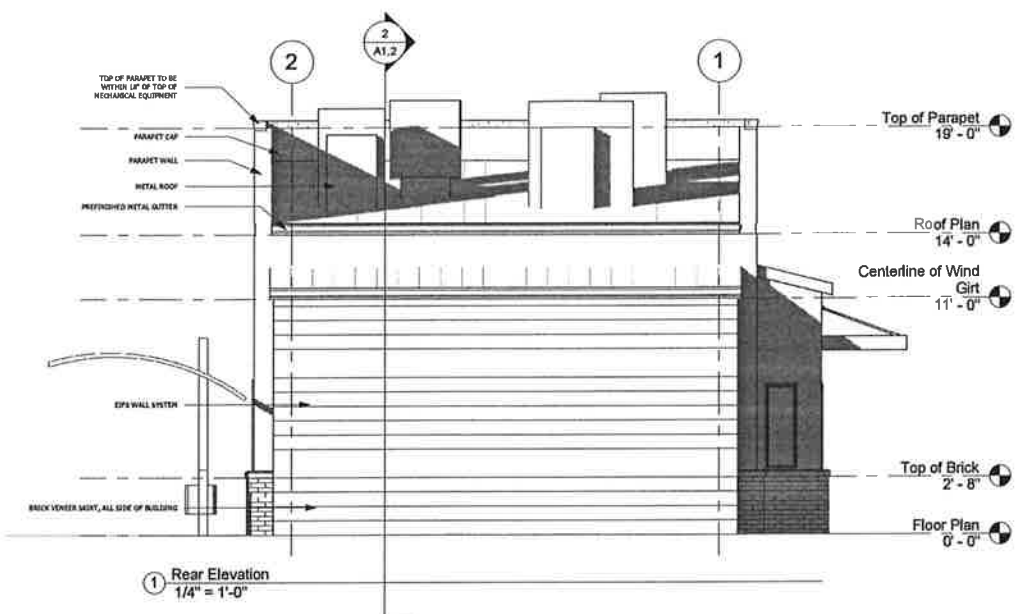
HE
ENGINEERING EXCELLENCE
Heritage
Engineering
P.O. BOX 305
Benton, Arkansas 72018
(501) 383-2303
FAX (501) 383-2016
www.heritageengineering.net

Oriental Cuisine
Benton, Arkansas
4 Front & Rear Elevation

PROJECT:	
HE JOB NO.:	17-04
FILE NAME:	C:\Users\marka\Documents\17-04\Oriental Cuisine\Oriental Cuisine.dwg
PLOT SCALE:	
1st ISSUE:	12/28/04
2nd ISSUE:	12/28/04
3rd ISSUE:	12/28/04

SCALE:	1/4" = 1'-0"
DESIGNED BY:	Designer
DRAWN BY:	Architect
CHECKED BY:	Checker

SHEET No.
A2.1



PRELIMINARY CONCEPT PLAN

**LOTS A1-A4
LOTS B1-B6
LOTS C1-C5
LOTS D1-D12
LOTS E1-E8
LOTS F1-F3
LOTS G1-G5**

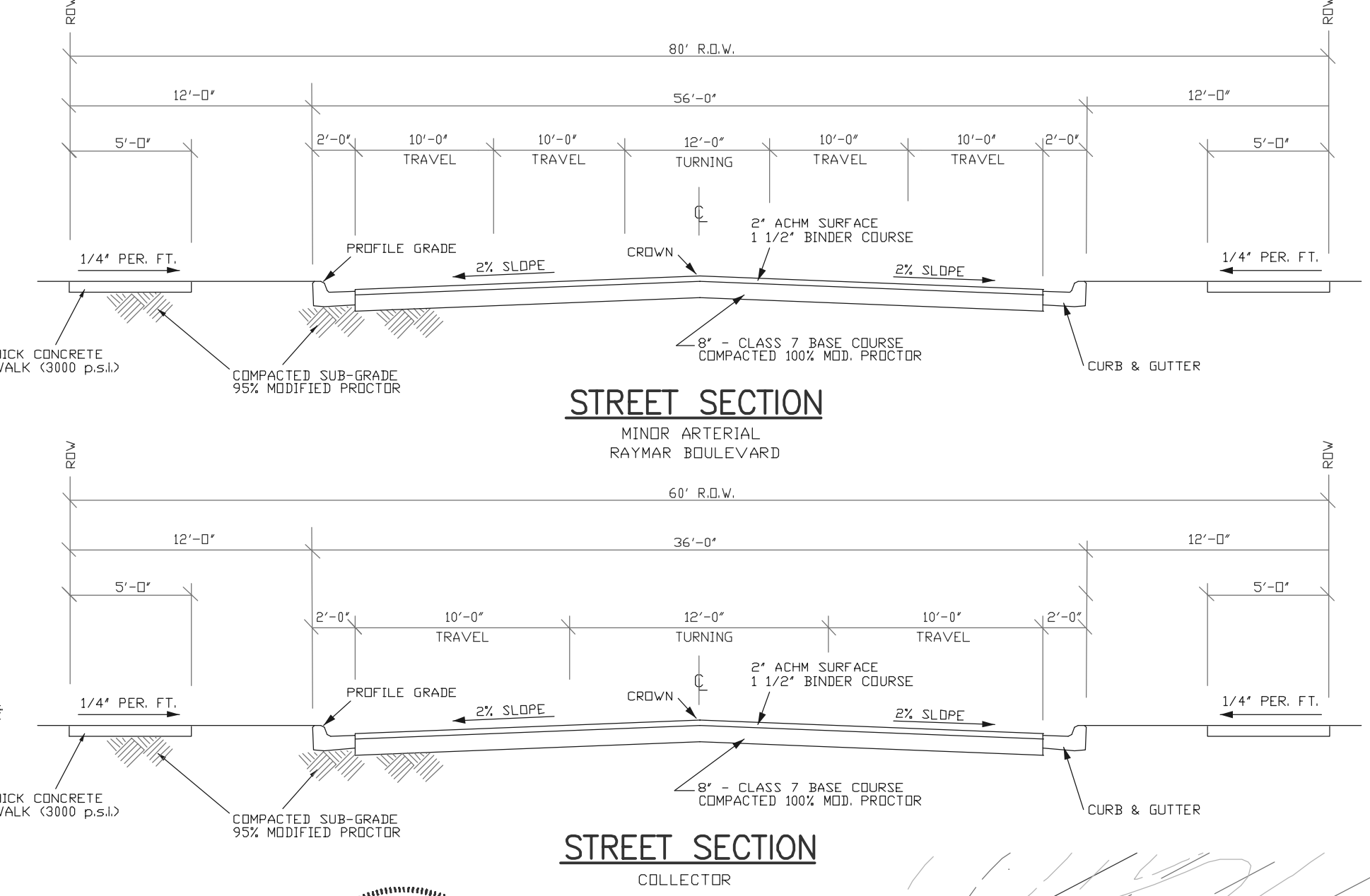
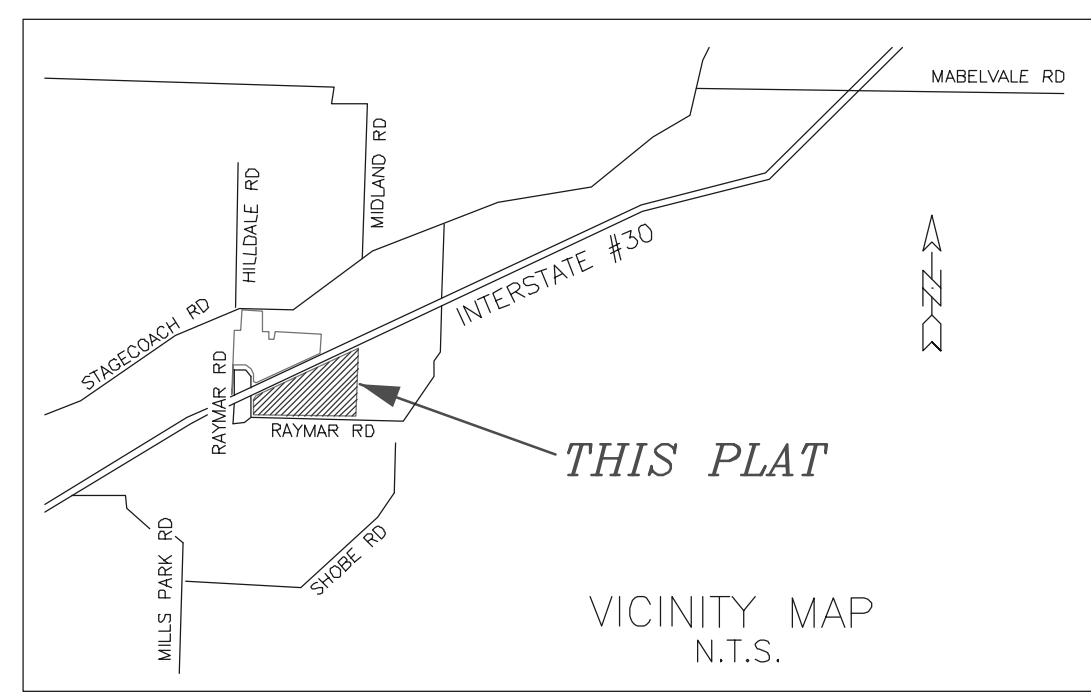
**&
TRACTS**

BRYANT CROSSING

**AN ADDITION TO THE CITY OF
BRYANT, ARKANSAS**

SEPTEMBER 21, 2017

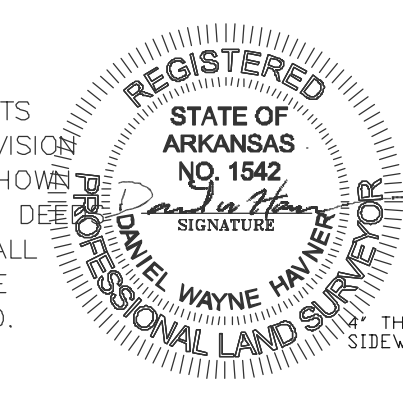
WHITE-DATERS & ASSOCIATES, INC.
ENGINEERING, LAND PLANNING & SURVEYING
24 RAYMOND CIRCLE, LITTLE ROCK, ARKANSAS 72223



- Public Works Notes:**
- NPDES & Grading permits are required prior to construction.
 - Stormwater detention ordinance does apply to this property.
 - Plans of all work in right-of-way shall be submitted for approval prior to start of work.
 - Provide striping and signage plans as per ordinance for Traffic Engineering approval.
 - Prior to construction obtain barricade permit for work done within right-of-way.
 - Easements are for utilities and drainage where needed.
 - Collector streets to be 60 ft right-of-way with 36 ft street with sidewalk on both sides.
 - Minor Arterial street to be 80 ft right-of-way with 56 ft street with sidewalk on both sides.

PRELIMINARY SURVEYING ACCURACY

I, DANIEL W. HAVNER, HEREBY CERTIFY THAT THIS PROPOSED PRELIMINARY PLAT CORRECTLY REPRESENTS A SURVEY COMPLETED BY ME OR UNDER MY SUPERVISION ON 09-06-2017; THAT THE BOUNDARY LINES SHOWN HEREON CORRESPOND WITH THE DESCRIPTION IN THE DEED CITED IN THE ABOVE SOURCE OF TITLE; AND THAT ALL MONUMENTS WHICH WERE FOUND OR PLACED ON THE PROPERTY ARE CORRECTLY DESCRIBED AND LOCATED.



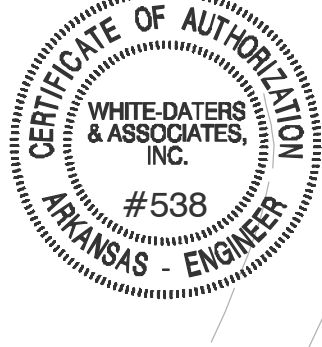
DATE OF EXECUTION: 09-06-2017
 DANIEL W. HAVNER
 REGISTERED LAND SURVEYOR
 NO. 1542, ARKANSAS

CERTIFICATE OF PRELIMINARY PLAT APPROVAL

ALL REQUIREMENTS OF THE CITY OF BRYANT SUBDIVISION RULES AND REGULATIONS RELATIVE TO THE PREPARATION AND SUBMITTAL OF A PRELIMINARY PLAT HAVING BEEN FULFILLED, APPROVAL OF THIS PLAT IS HEREBY GRANTED, SUBJECT OF FURTHER PROVISIONS OF SAID RULES AND REGULATIONS.

THIS CERTIFICATE SHALL EXPIRE _____

BRYANT PLANNING COMMISSION DATE OF EXECUTION _____



- General Notes:**
- Owner & Developer: THE SPIN-OFF, INC. C/O ANDREW V. FRANCIS, P.A. 2311 BISCAYNE DRIVE, SUITE 205 LITTLE ROCK, AR 72227 PHONE 501-954-7390
 - Linear feet of New Streets: 9,650 LF
 - Average Size of Lot: 300' X 250'
 - Number of Lots: 43 Lots
 - Applicable existing covenants: None
 - Source of Water Supply: City of Bryant
 - Source of Wastewater Disposal: City of Bryant
 - Floodway / Floodplain: N/A
 - Municipal Boundaries: within Bryant city limit
 - Phasing plan: As Market Demands
 - Minimum Lot Area: 51,000 SF

CERTIFICATE OF OWNER

WE, THE UNDERSIGNED, OWNERS OF THE REAL ESTATE, SHOWN AND DESCRIBED HEREON, DO HEREBY CERTIFY THAT WE HAVE LAID OFF, PLATTED, AND SUBDIVIDED SAID REAL ESTATE IN ACCORDANCE WITH THIS PLAT.

DATE OF EXECUTION _____

D.R. _____ PAGE _____

SOURCE OF TITLE _____

CERTIFICATE OF ENGINEERING ACCURACY

TIMOTHY E. DATERS, HEREBY CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS A SURVEY AND PLAN MADE BY ME OR UNDER MY SUPERVISION; THAT ALL MONUMENTS SHOWN HEREON ACTUALLY EXIST AND THEIR LOCATIONS, SIZE, TYPE AND MATERIAL ARE CORRECTLY SHOWN; AND THAT ALL REQUIREMENTS OF THE CITY OF BRYANT SUBDIVISION RULES AND REGULATIONS HAVE BEEN FULLY COMPLIED WITH.

DATE OF EXECUTION: 09-06-2017
 TIMOTHY E. DATERS
 REGISTERED PROFESSIONAL ENGINEER NO. 5033, ARKANSAS

LEGAL DESCRIPTION

PART OF THE SOUTHEAST QUARTER (SE 1/4) AND PART OF THE SOUTHWEST QUARTER (SW 1/4) IN SECTION 14, TOWNSHIP 1 SOUTH (T-1-S), RANGE 14 WEST (R-14-W), SALINE COUNTY, BRYANT, ARKANSAS, AND LYING SOUTH OF THE INTERSTATE 30 HIGHWAY RIGHT-OF-WAY (R/W-3007), MORE PARTICULARLY DESCRIBED AS:

COMMENCING AT THE EAST CORNER OF SAID SECTION 14; THENCE S 02°24'44" WEST ALONG THE EAST LINE OF SAID SE 1/4, OF SAID SECTION 14 372.17 FEET TO A POINT ON THE SOUTHERLY R/W OF SAID INTERSTATE 30 HIGHWAY, SAID POINT BEING THE POINT OF BEGINNING; THENCE CONTINUING S 02°24'44" W ALONG SAID EAST LINE OF SAID SE 1/4 OF SAID SECTION 14 2275.62 FEET TO THE SE CORNER OF SAID SE 1/4, THENCE N 87°50'36" W ALONG THE SOUTH LINE OF SAID SECTION 14 3313.65 FEET TO THE EASTERLY R/W OF BRITANNIA ROAD CROSSOVER; THENCE N 15°08'40" E ALONG SAID EASTERLY R/W 67.57 FEET; THENCE N 01°52'00" E ALONG SAID EASTERLY R/W 431.68 FEET; THENCE N 26°17'20" E ALONG SAID EASTERLY R/W 131.34 FEET TO THE SOUTHERLY R/W OF INTERSTATE 30 HIGHWAY; THENCE N 65°09'42" E ALONG SAID SOUTHERLY R/W 3654.23 FEET TO THE POINT OF BEGINNING, CONTAINING 108.54 ACRES, MORE OR LESS.

LESS AND EXCEPT

A PART OF TRACT LOCATED WITHIN PARCEL 840-11678-000 OWNED BY THE SPIN-OFF, INC. SAID PART OF TRACT OF PROPERTY IS LOCATED IN THE SE 1/4 OF SECTION 14, T-1-S, R-14-W, SALINE COUNTY, BRYANT, ARKANSAS, AND LYING SOUTH OF THE INTERSTATE 30 HIGHWAY RIGHT-OF-WAY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE E 1/4 CORNER OF SAID SECTION 14; THENCE S 02°24'44" W ALONG THE EAST LINE OF SAID SE 1/4 OF SAID SECTION 14 FOR A DISTANCE OF 372.17 FT. TO A POINT ON THE SOUTHERLY R/W OF SAID INTERSTATE 30 HIGHWAY, SAID POINT BEING THE POINT OF BEGINNING; THENCE CONTINUING S 02°24'44" W ALONG SAID EAST LINE OF SAID SE 1/4 OF SAID SECTION 14 FOR A DISTANCE OF 89.99 FT.; THENCE S 65°09'42" W FOR A DISTANCE OF 108.80 FT.; THENCE N 2°50'18" W FOR A DISTANCE OF 80.00 FT. TO THE SOUTHERLY R/W OF SAID INTERSTATE 30 HIGHWAY; THENCE N 65°09'42" E ALONG SAID SOUTHERLY R/W OF SAID INTERSTATE 30 HIGHWAY FOR A DISTANCE OF 150.00 FT. TO THE POINT OF BEGINNING, CONTAINING 0.238 ACRES, MORE OR LESS.

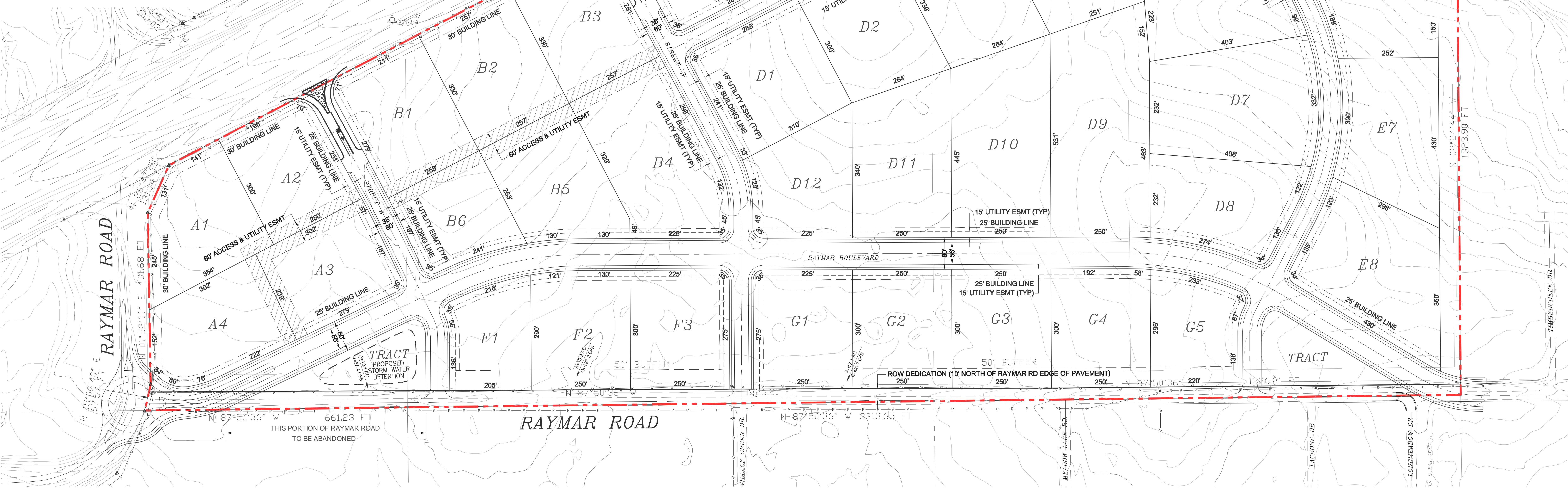
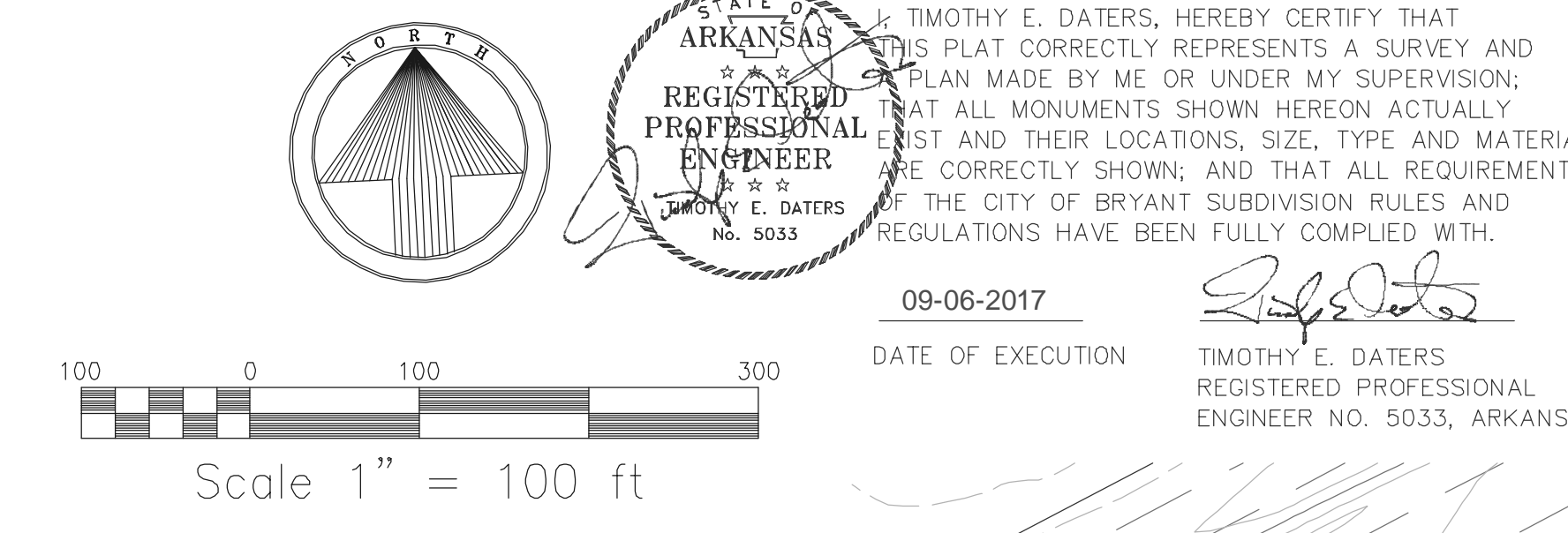
ALSO LESS AND EXCEPT

THE EAST 50 FT. OF THE SE 1/4 OF SECTION 14, T-1-S, R-14-W SALINE COUNTY, ARKANSAS, LYING SOUTH OF INTERSTATE ROUTE #30 AND NORTH OF RAYMAR ROAD BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF THE NE 1/4 SE 1/4, SAID SECTION 14; THENCE S 02°24'44" W ALONG THE EAST LINE OF SAID NE 1/4 SE 1/4, 372.17 FT. TO A POINT ON THE SOUTHERLY R/W OF SAID INTERSTATE ROUTE #30 AND THE POINT OF BEGINNING; THENCE S 02°24'44" W CONTINUING ALONG SAID EAST LINE AND ALONG THE EAST LINE OF THE SE 1/4 SE 1/4, SAID SECTION 14, 2275.62 FT. TO THE SOUTHEAST CORNER OF SAID SE 1/4, LYING 40 FT. NORTH OF THE CENTERLINE OF RAYMAR ROAD; THENCE N 87°50'36" W ALONG THE SOUTH LINE OF SAID SE 1/4, 50.00 FT.; THENCE N 02°24'44" E ALONG SAID EAST LINE 50 FT. WEST OF AND PARALLEL TO THE EAST LINE OF SAID SE 1/4, 2250.29 FT. TO A POINT ON THE SAID SOUTHERLY R/W OF INTERSTATE ROUTE #30; THENCE N 65°09'42" E ALONG SAID SOUTHERLY R/W OF SAID INTERSTATE 30 HIGHWAY, 56.24 FT. TO THE POINT OF BEGINNING, CONTAINING 2.974 ACRES MORE OR LESS.

ALSO LESS AND EXCEPT

THE RIGHT-OF-WAY FOR RAYMAR ROAD.



ANDREW V. FRANCIS, P.A.
ATTORNEY AT LAW
2311 BISCAYNE DRIVE, SUITE 205
LITTLE ROCK, AR 72227
TELEPHONE (501) 954-7390
FACSIMILE (501) 325-3427

ANDREW V. FRANCIS
E-MAIL ADDRESS:
AVFPA@SBCGLOBAL.NET

November 9, 2017

Mr. Truett Smith
Director
Department of Planning and Community Development
City of Bryant
210 S.W. 3rd St.
Bryant, AR 72022

RE: The Spin-Off, Inc. ("Spin-Off")
Concept Plan, 105 +/- acres, SEC I-30 and Bryant Parkway
Request for Master Street Plan Amendment, rerouting of Raymar Road

Dear Mr. Smith:

Pursuant to the comments received by Spin-Off from the Design Review Committee, Spin-Off is requesting to amend its preliminary plat application as follows.

Spin-Off amends its preliminary plat application to convert it to a Concept Plan. Due to the long-range and preliminary nature of the subdivision plans, Spin-Off agrees with the DRC that this item is better handled as a Concept Plan. Spin-Off will submit preliminary plat applications for portions of the property as it develops. Per the comments of the DRC, Spin-Off will construct all drainage and detention needed to serve any portion of the development at the same time the platted improvements are built.

White-Daters and Associates, Inc., will submit a revised drawing reflecting all comments received from the DRC, including any applicable comments in the letter dated September 27, 2017, from Crist Engineers to your office.

As discussed at the DRC meeting on this item, at the time of platting any portion of Raymar Boulevard, Spin-Off will request a variance from the number of travel lanes on the minor arterial from four travel lanes to two travel lanes. Spin-Off will provide the eighty (80) foot wide right of way for a minor arterial. I also understand from DRC that staff wanted Raymar Boulevard to be built with a median. A median is not feasible because of the number of lots that take direct access from Raymar Boulevard. In lieu of a median, Spin-Off proposes to construct a center turn lane. To the extent staff wants a median, Spin-Off will request a variance from that requirement.

As part of the Concept Plan, Spin-Off is requesting approval to construct all driveway aprons approved by the Arkansas Highway and Transportation Department ("AHTD") for both the north and south sides of the Spin-Off property. I have included a drawing showing the approved locations for each driveway and the proposed design. Spin-Off will construct the portion of the

Page 2

Mr. Truett Smith
Planning and Community Development
November 9, 2017

driveways within the AHTD right-of-way and a limited termination of each apron on the Spin-Off property. Prior to the construction of any apron, Spin-Off will apply to the City of Bryant for all applicable permits and comply with all applicable City regulations for the construction (SWPPP, etc....).

Thank you and please contact me with any questions.

Cordially,

ANDREW V. FRANCIS, P.A.

Andrew V. Francis

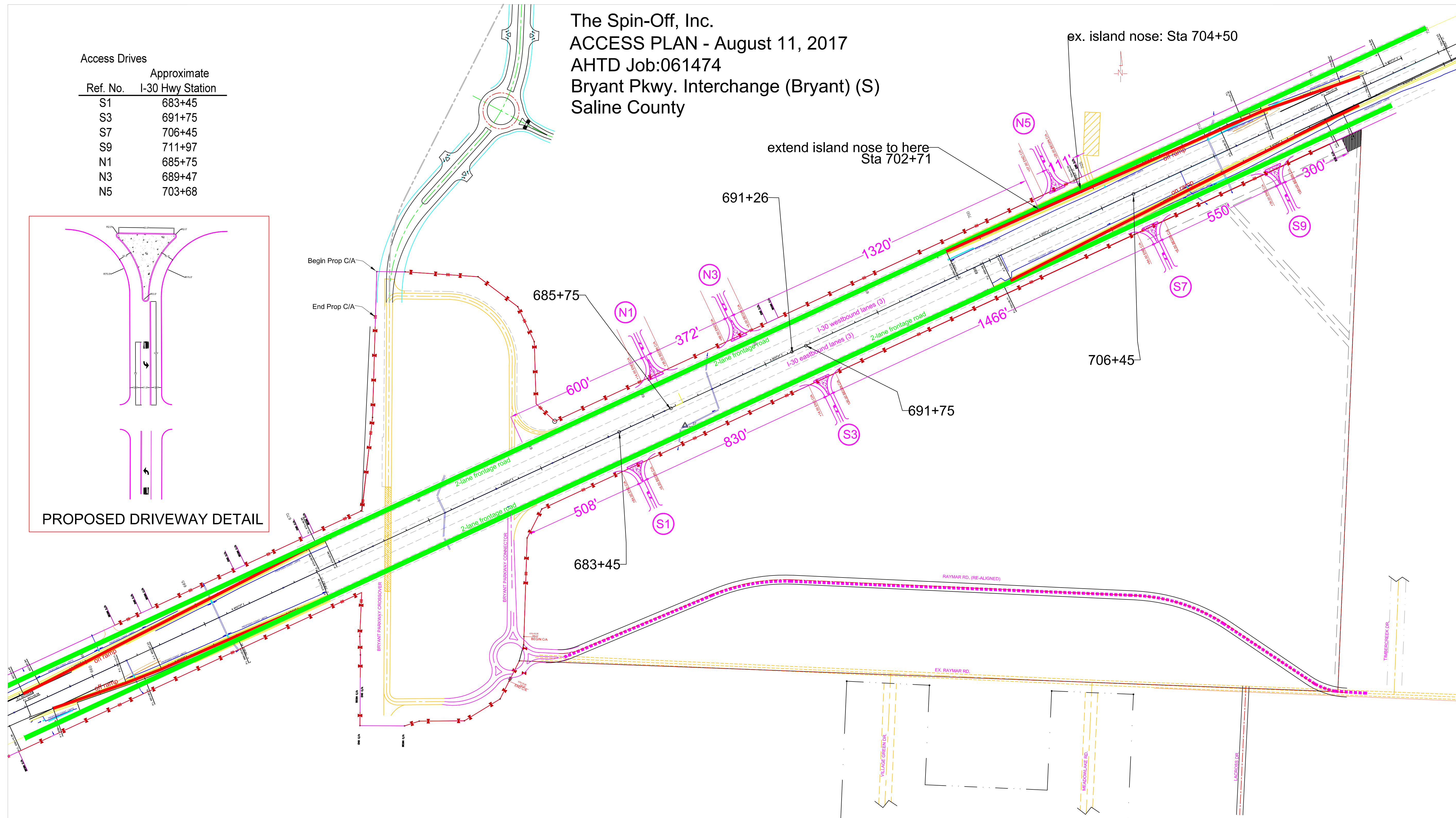
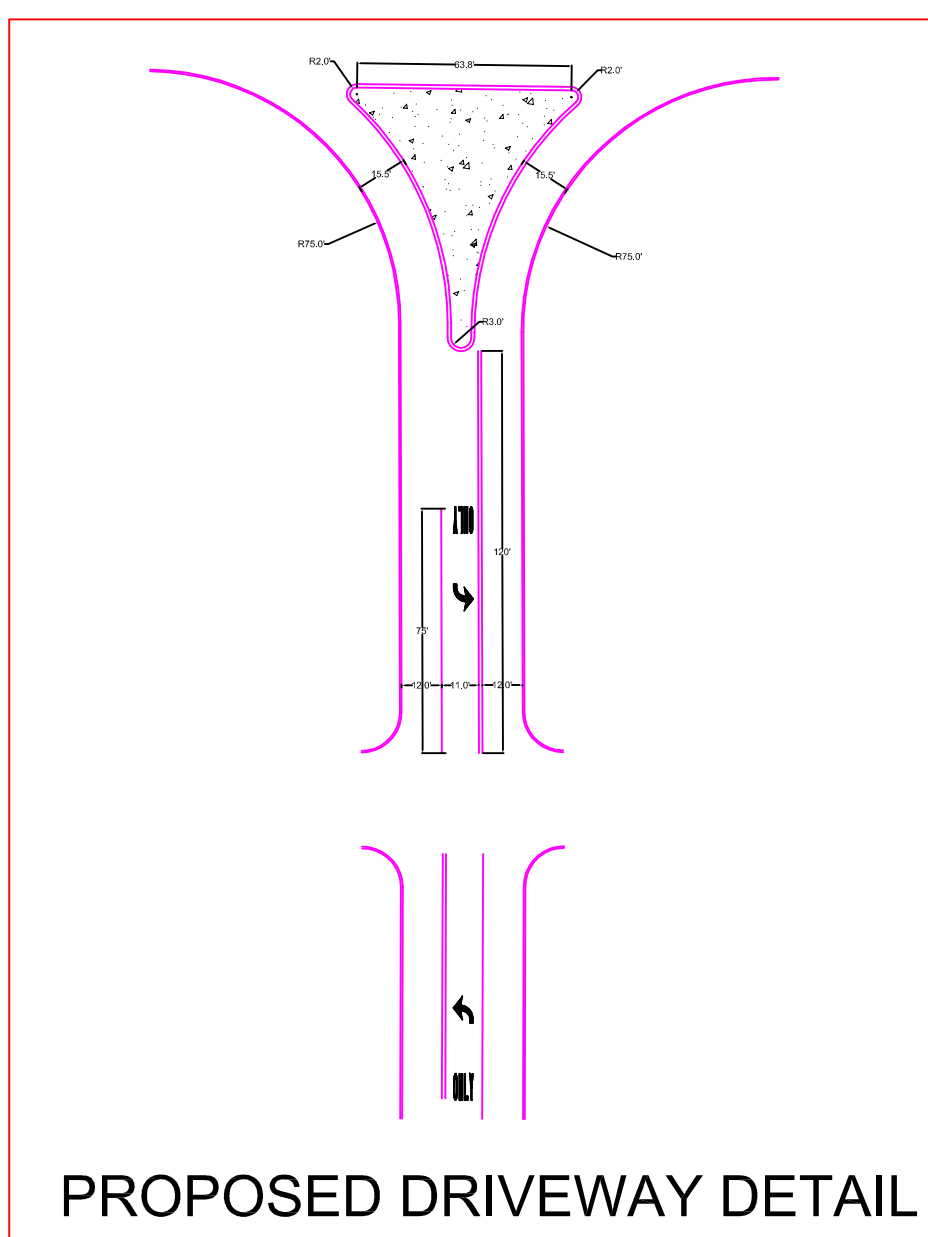
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Enclosures

cc: The Spin-Off, Inc.
White-Daters, Inc.

The Spin-Off, Inc.
 ACCESS PLAN - August 11, 2017
 AHTD Job:061474
 Bryant Pkwy. Interchange (Bryant) (S)
 Saline County

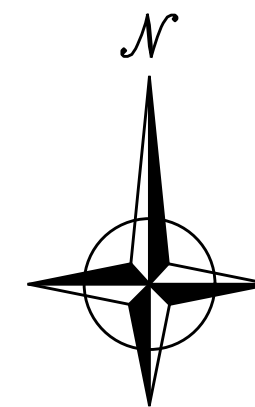
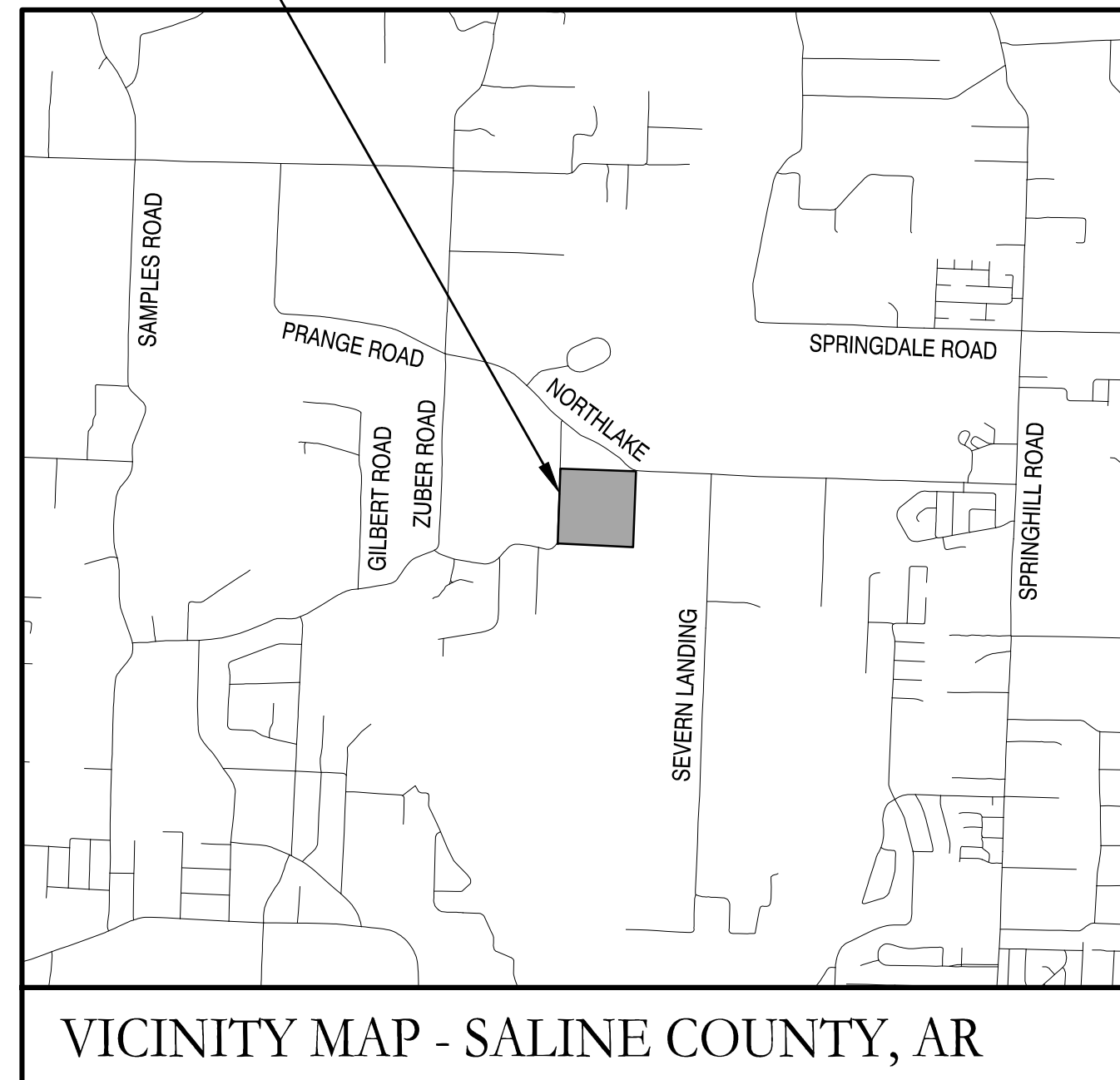
Access Drives	
Ref. No.	I-30 Hwy Station
S1	683+45
S3	691+75
S7	706+45
S9	711+97
N1	685+75
N3	689+47
N5	703+68



KENSINGTON PLACE SUBDIVISION - PHASE 2

CITY OF BRYANT, SALINE COUNTY, ARKANSAS

KENSINGTON PLACE
SUBDIVISION



Prepared by:

GarNat Engineering, LLC

P.O. Box 116 (72018)
2990 Military Road
Benton, AR 72015

Ph (501) 408-4650
Fx (888) 900-3068
www.garnatengineering.com

Designing our client's success

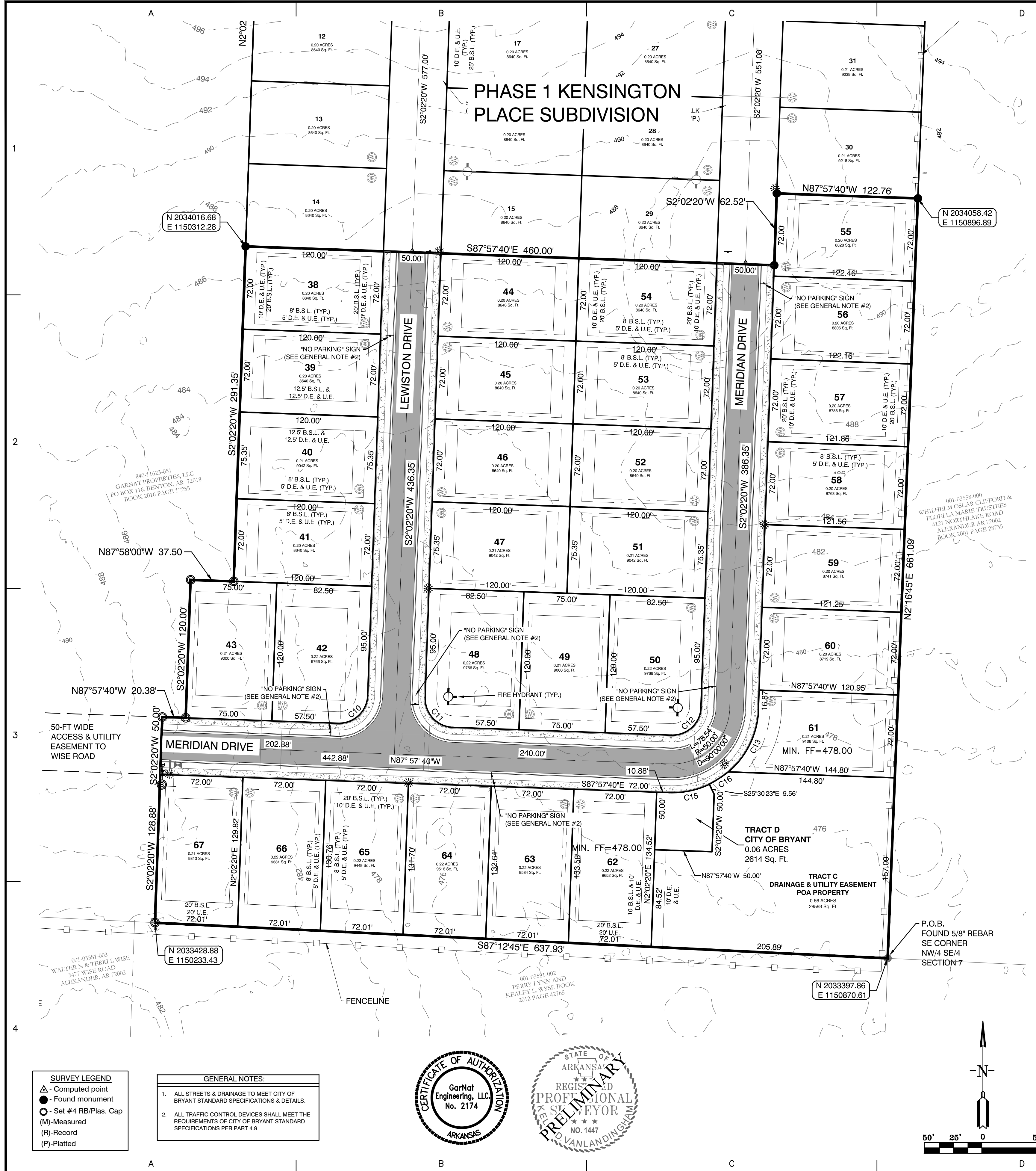
DRAWING INDEX:

- 1 PRELIMINARY PLAT
- 2 WATER AND SANITARY SEWER PLAN & PROFILE
- 3 STREET & DRAINAGE PLAN
- 4 STREET PROFILE - MERIDAN STREET
- 5 STREET PROFILE - LEWISTON STREET

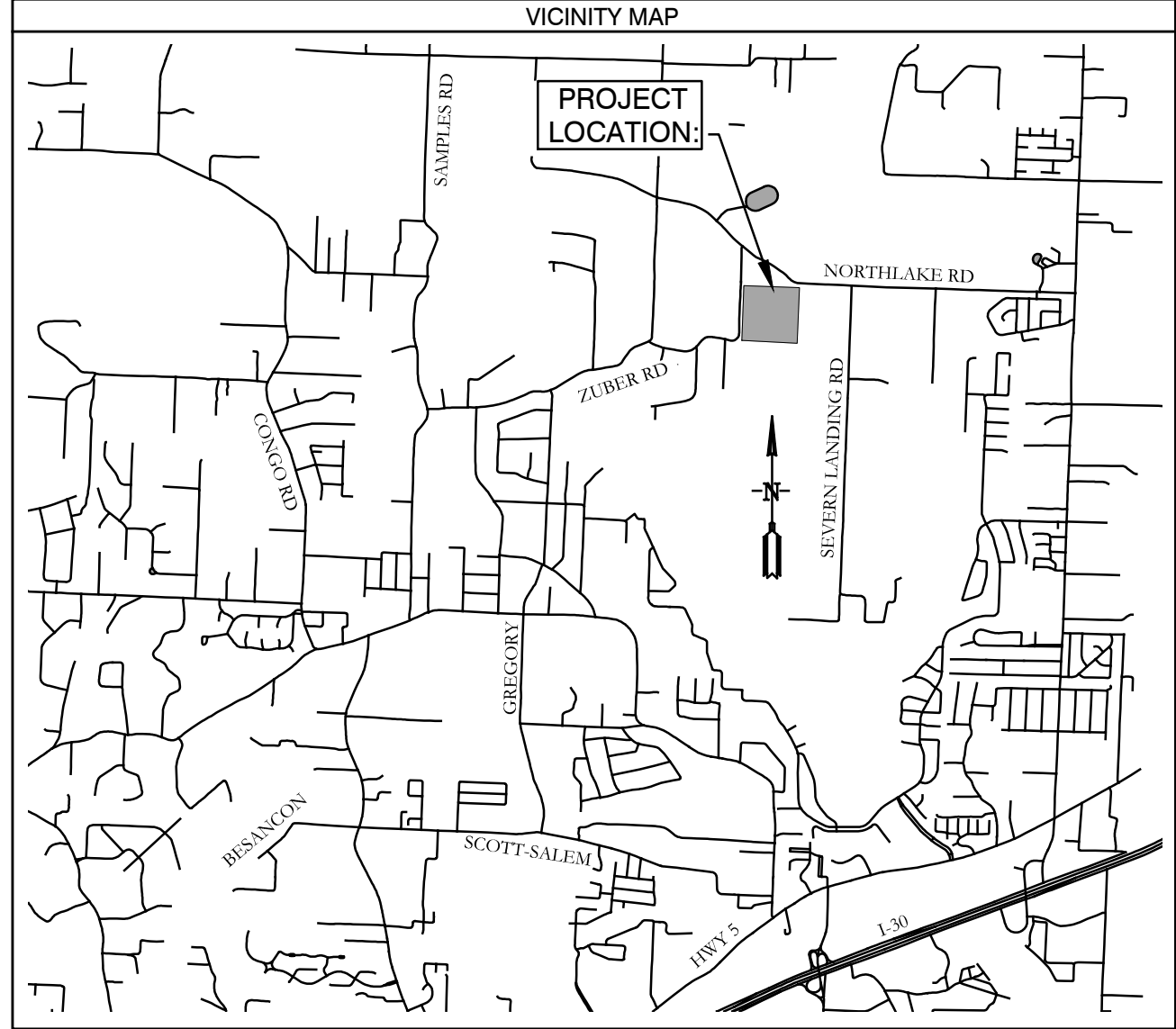


ARKANSAS

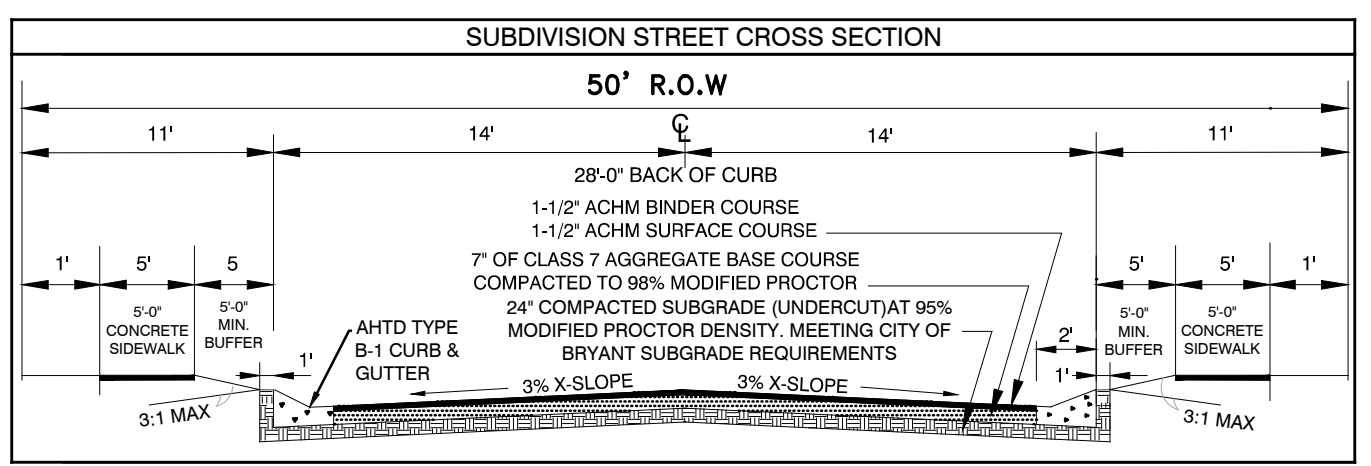




Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C10	39.27'	25.00'	90°00'	S47°02'20"W	35.36'
C11	39.27'	25.00'	90°00'	N42°57'40"W	35.36'
C12	39.27'	25.00'	90°00'	S47°02'20"W	35.36'
C13	61.93'	75.00'	47°19'	N25°41'41"E	60.19'
C16	19.79'	122.48'	9°15'	N56°50'54"E	19.77'
C15	36.06'	75.00'	27°33'	N78°18'23"E	35.72'



PROPERTY DESCRIPTION:
 PART OF THE NORTHWEST QUARTER OF SOUTHEAST QUARTER (NW 1/4 SE 1/4) OF SECTION 7, TOWNSHIP 1 SOUTH, RANGE 14 WEST, DESCRIBED AS FOLLOWS:
BEGINNING AT THE SOUTHEAST CORNER OF SAID NW 1/4 SE 1/4 BEING A REBAR; THENCE N87°12'45"W A DISTANCE OF 637.93 FEET TO A REBAR AND CAP; THENCE N2°02'20"E A DISTANCE OF 178.88 FEET TO A REBAR AND CAP; THENCE S87°57'40"E A DISTANCE OF 20.38 FEET TO A REBAR AND CAP; THENCE S2°02'20"W A DISTANCE OF 120.00 FEET TO A REBAR AND CAP; THENCE S87°57'40"E A DISTANCE OF 37.50 FEET TO A REBAR AND CAP; THENCE N2°02'20"E A DISTANCE OF 291.35 FEET TO A REBAR AND CAP, BEING THE SOUTHWEST CORNER OF PHASE 1 OF KENSINGTON PLACE SUBDIVISION; THENCE ALONG THE SOUTH LINE OF SAID PHASE 1 OF KENSINGTON PLACE SUBDIVISION THE FOLLOWING CALLS: S87°57'40"E A DISTANCE OF 460.00 FEET TO A REBAR AND CAP; N2°02'20"E A DISTANCE OF 62.52 FEET TO A REBAR AND CAP; S87°57'40"E A DISTANCE OF 122.76 FEET TO A REBAR AND CAP, BEING THE SOUTHWEST CORNER OF SAID PHASE 1 OF KENSINGTON PLACE SUBDIVISION; THENCE S2°16'45"W A DISTANCE OF 681.09 FEET TO THE POINT OF BEGINNING, CONTAINING 8.45 ACRES, OR 368,259 SQUARE FEET, MORE OR LESS.



PROPERTY SPECIFICATIONS:
 ZONING CLASSIFICATION: R-1.5
 MIN. LOT SIZE: 8,640 S.F.
 NUMBER OF LOTS: 30
 SOURCE OF WATER: SALEM WATER
 SOURCE OF SEWER: CITY OF BRYANT
BUILDING MINIMUM SETBACKS:
 FRONT - 20' OR AS SHOWN
 REAR - 20' OR AS SHOWN
 SIDE - 8' OR AS SHOWN
EASEMENTS (MINIMUM): UTILITY & DRAINAGE (D.E. & U.E.)
 FRONT - 10' OR AS SHOWN
 REAR - 10' OR AS SHOWN
 SIDE - 5' OR AS SHOWN
 STREET RIGHT OF WAY: 50' OR AS SHOWN
 STREET WIDTH: 28' BOC TO BOC
 LOT CORNERS: SET #4 REBAR WITH CAP
 TRACT C WILL BE OWNED & MAINTAINED BY PROPERTY OWNERS ASSOCIATION. TRACT D WILL BE OWNED & MAINTAINED BY THE CITY OF BRYANT.

BASIS OF BEARINGS:
 NAD 83 ARKANSAS GRID SOUTH ZONE (GPS)
CERTIFICATIONS:
 By affixing my seal and signature, I Kelly D. Vanlandingham, PLS No. 1447, hereby certify that this drawing correctly depicts a survey completed under my supervision dated 7/20/2016.
 According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Saline County unincorporated areas, panel # 05125C0225D dated 6/19/2012, no portion, dated of the property described hereon does lie within the 100 year flood hazard boundary.

PLAT CERTIFICATES:

OWNER: Name: Thomas D.B. Collins, Ltd. Address: 39 Walnut Valley Little Rock, AR 72211

DEVELOPER: Name: Thomas D.B. Collins, Ltd. Address: 39 Walnut Valley Little Rock, AR 72211

CERTIFICATE OF RECORDING: This document, number _____ is filed for record this _____ day of _____, 20____ at _____ a.m./p.m. in Plat or Deed Book _____ Page _____ For Bill of Assurance see Deed Record Book _____ Page _____

CERTIFICATE OF OWNER: We, the undersigned, owners of the real estate shown and described herein do hereby certify that we have laid off, platted and subdivided, and do hereby lay off, plat and subdivide said real estate in accordance with the within plat.

CERTIFICATE OF PRELIMINARY SURVEYING ACCURACY: I, Kelly D. Vanlandingham, hereby certify that this proposed preliminary plat correctly represents a boundary survey made by me or under my supervision on 6/19/2016 that the boundary lines shown hereon correspond with the description in the deeds cited in the above Source of Title; and that all monuments which were found or placed on the property are correctly described and located.

CERTIFICATE OF PRELIMINARY ENGINEERING ACCURACY: I, Kelly D. Vanlandingham, hereby certify that this plat correctly represents a survey and a plan made by me or under my supervision; that all monuments shown herein actually exist and their locations, size, type, and material are correctly shown; and that all requirements of the City of Bryant Subdivision Rules and Regulations have been fully complied with.

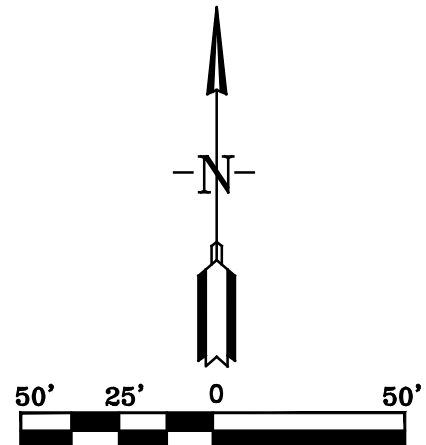
CERTIFICATE OF PRELIMINARY PLAT APPROVAL: All requirements of the City of Bryant Subdivision Rules and Regulations relative to the preparation and submittal of a Preliminary Plat having been fulfilled, approval of this plat is hereby granted, subject to further provisions of said Rules and Regulations.

This Certificate shall expire Date: _____

Date of Execution _____ **Name, Chairman** Kelly D. Vanlandingham Registered Land Surveyor No. 1447, Arkansas **Bryant Planning Commission**

SURVEY LEGEND
 △ - Computed point
 ● - Found monument
 ○ - Set #4 RB/Plas. Cap
 (M) - Measured
 (R) - Record
 (P) - Platted

GENERAL NOTES:
 1. ALL STREETS & DRAINAGE TO MEET CITY OF BRYANT STANDARD SPECIFICATIONS & DETAILS.
 2. ALL TRAFFIC CONTROL DEVICES SHALL MEET THE REQUIREMENTS OF CITY OF BRYANT STANDARD SPECIFICATIONS PER PART 4.9



GarNat Engineering, LLC
 Ph (501) 408-4650
 P.O. Box 116 (72018)
 2909 Military Road
 Benton, Arkansas 72015
 gnatengr@gmail.com

REVISIONS PER COMMENTS FROM BRYANT

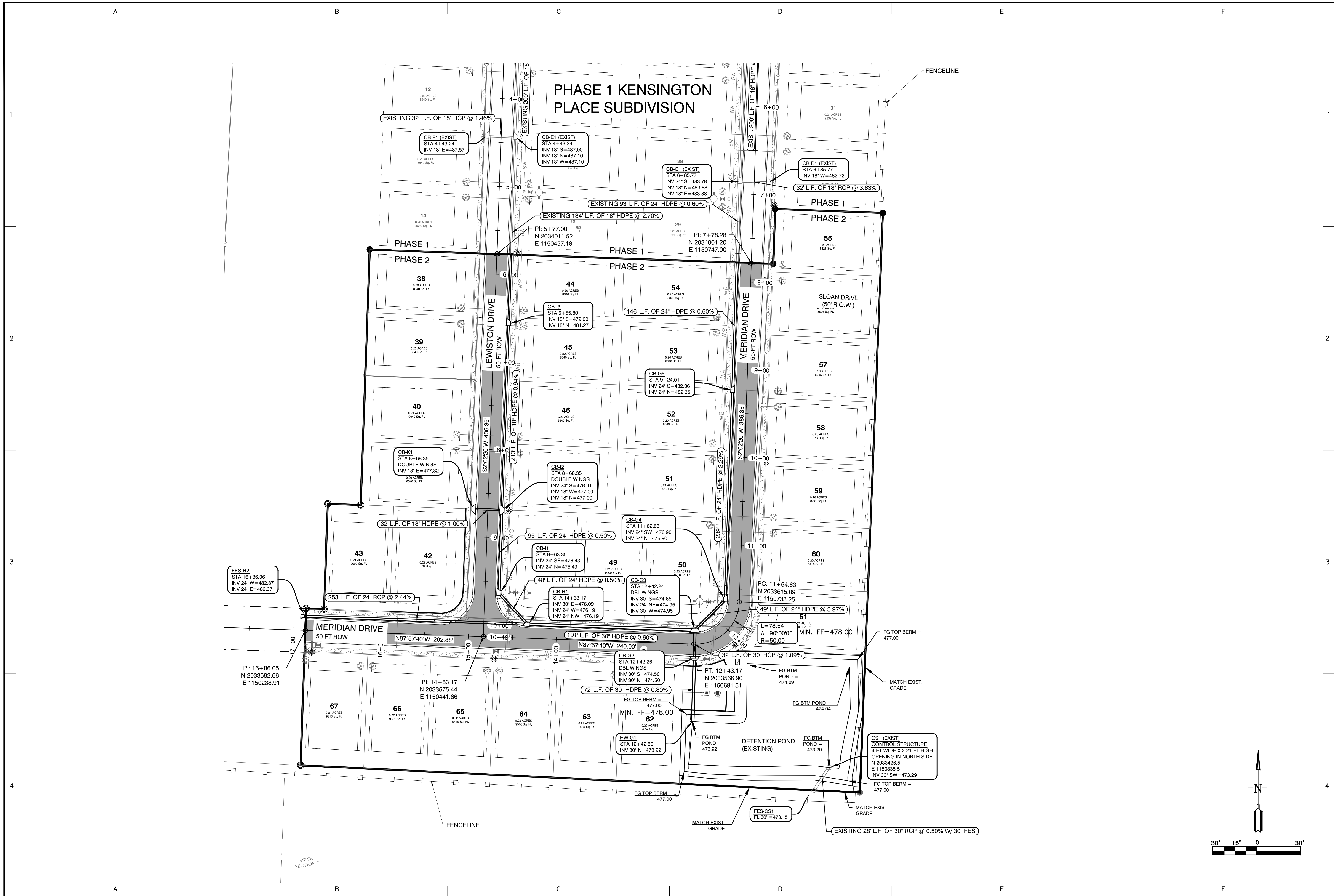
DATE	REVISION	BY	KDV
9-14-2017			

DESIGNING OUR CLIENT'S SUCCESS

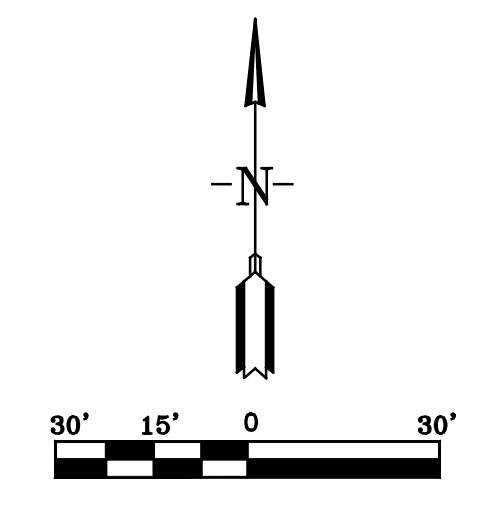
KENSINGTON PLACE SUBDIVISION, PHASE 2, CITY OF BRYANT, ARKANSAS

PRELIMINARY PLAT

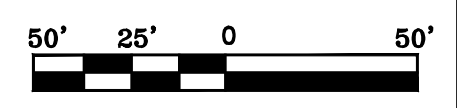
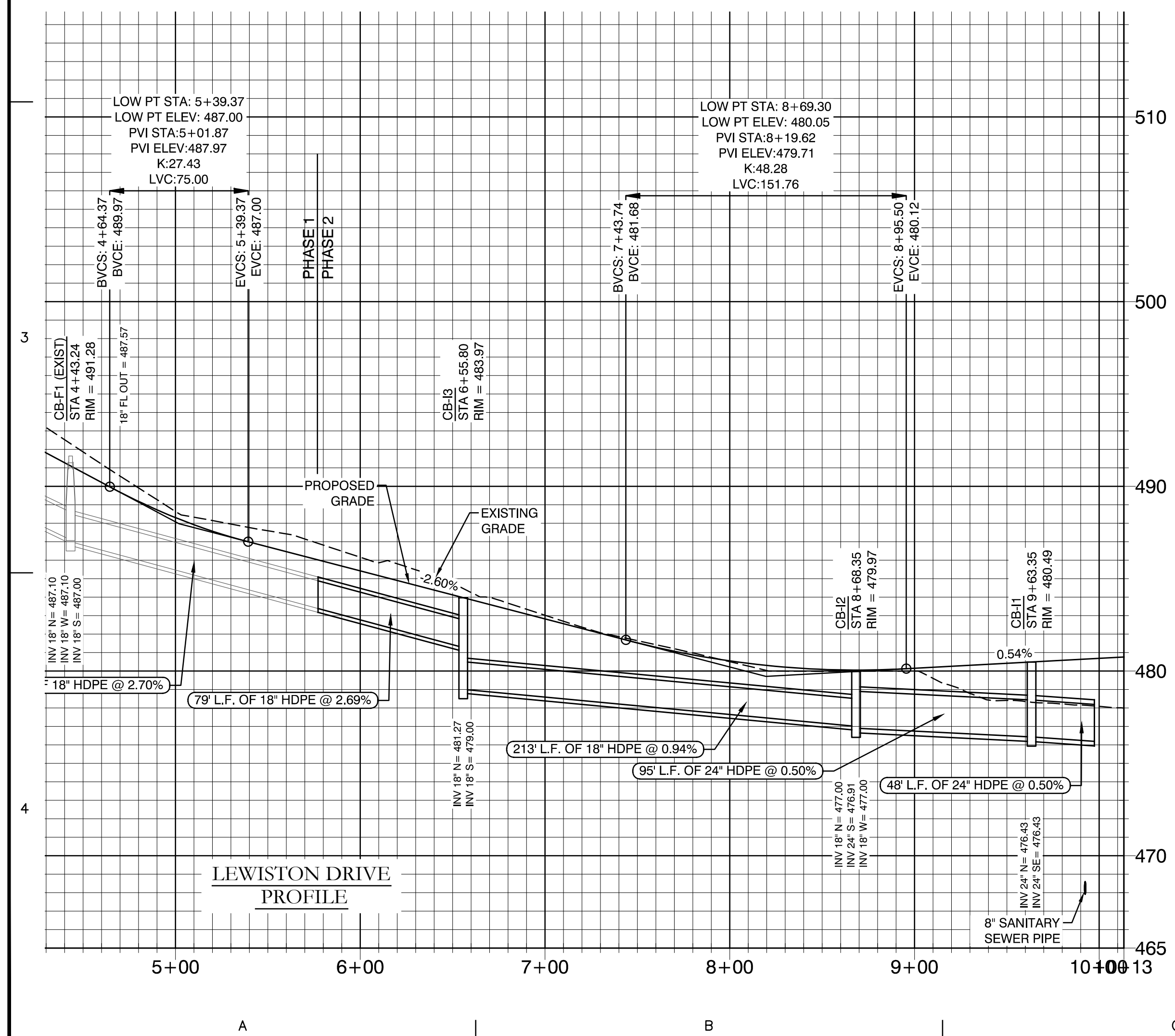
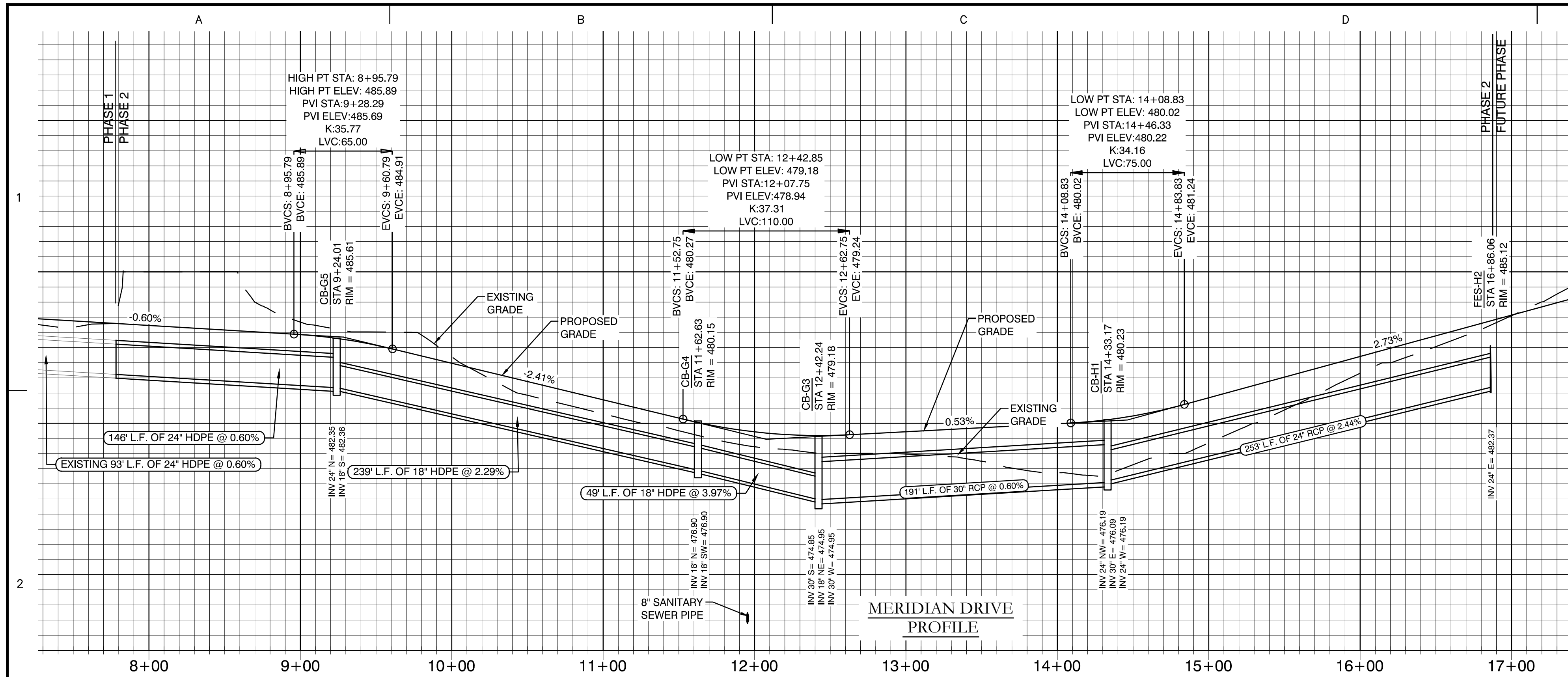
PROJECT NO: 16044
 DATE: AUG 22, 2017
 SHEET NO: 1



BY: KDV	REVISION	DATE	REVISIONS PER COMMENTS FROM BRYANT
		8-14-2017	
<p>GNE Designing our client's success GarNat Engineering, LLC Ph (501) 408-4650 P.O. Box 116 (72018) 2909 Military Rd Benton, AR 72015 Fax (888) 900-3068 garnaengineering@gmail.com</p>			
<p>KENSINGTON PLACE SUBDIVISION, PHASE 2, CITY OF BRYANT, SALINE COUNTY, ARKANSAS</p>			
<p>STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER KENNETH L. VANLANDINGSHAM NO. 7996 82217</p>			
<p>CONTENTS: STREET & DRAINAGE PLAN</p>			
<p>PROJECT NO: 16044</p>			
<p>DATE: AUG 22, 2017</p>			
<p>SHEET NO: 3</p>			

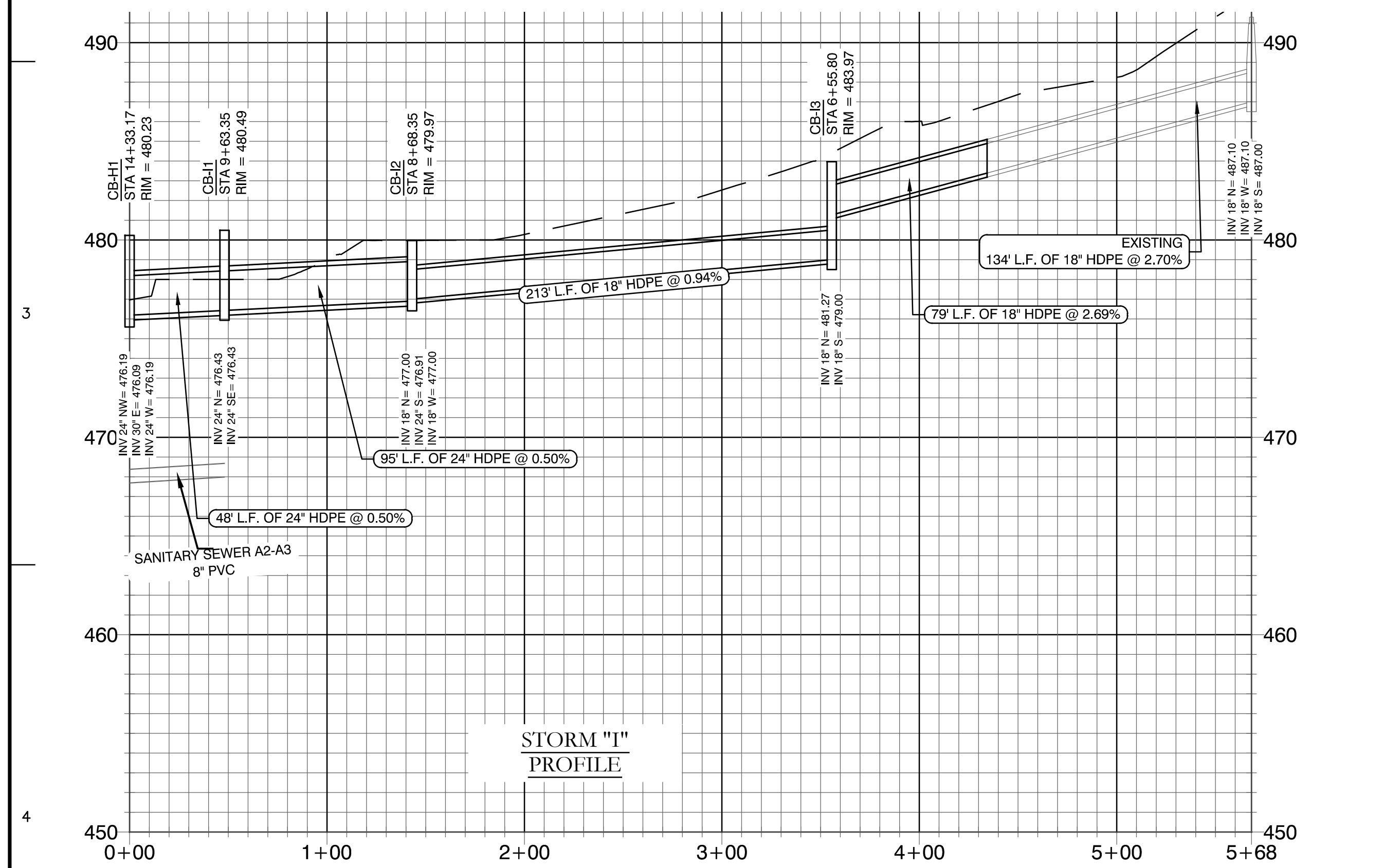
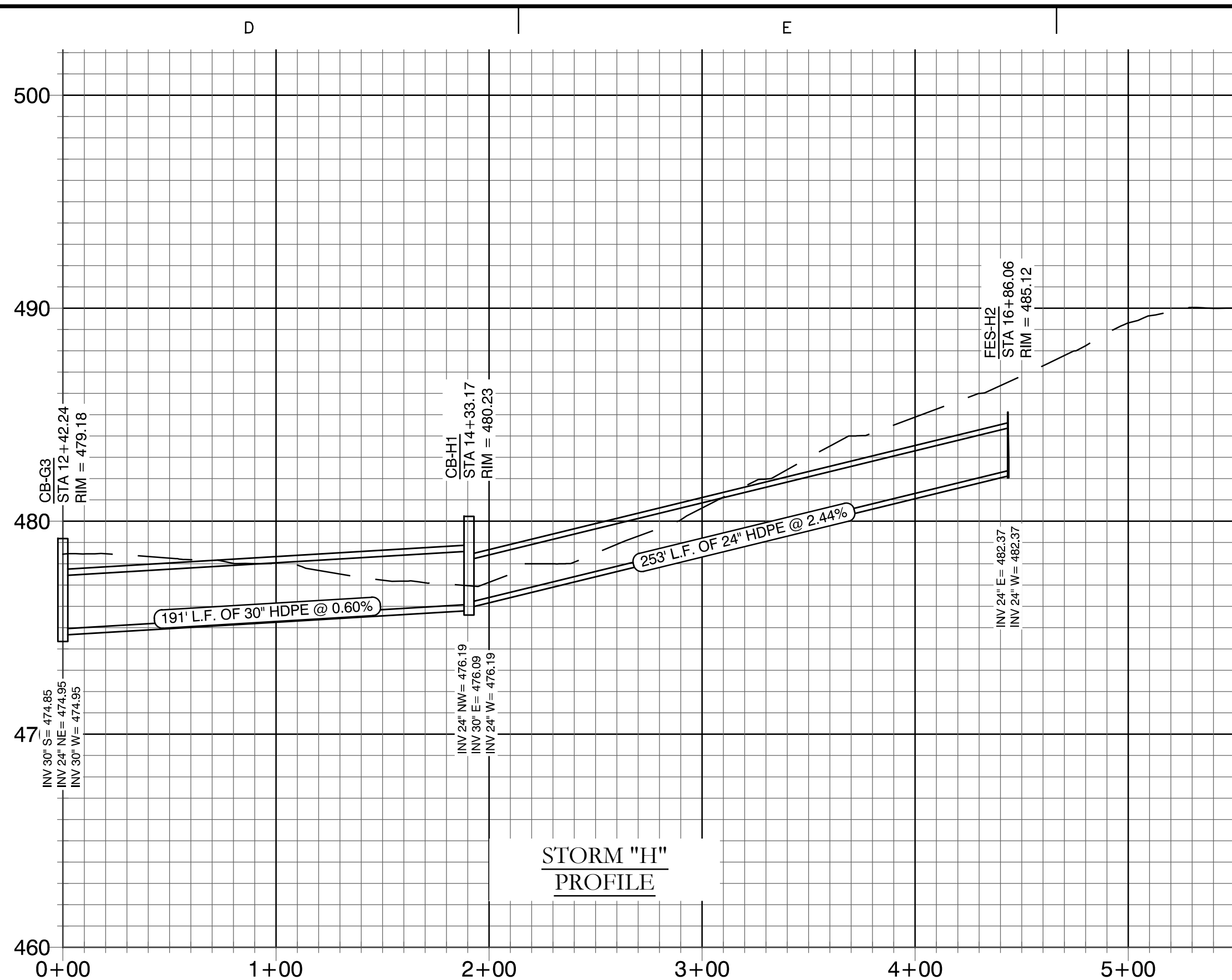
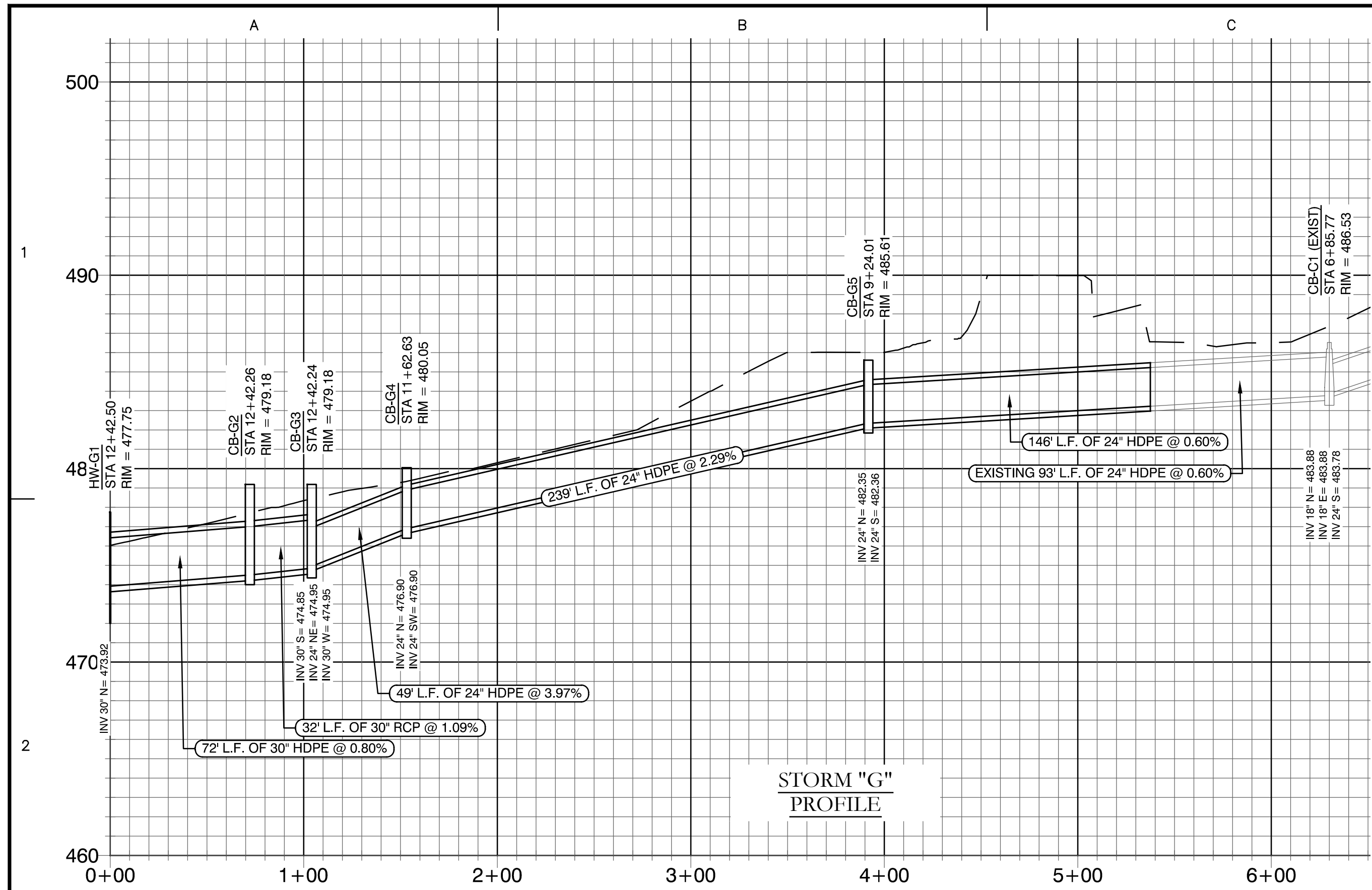


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BY	
REVISION	
DATE	
GN Designing our client's success GarNat Engineering, LLC P.O. Box 116 (72018) Ph (501) 408-4650 2909 Military Rd Fx (888) 900-3068 Benton, AR 72015 gamatengineering@gmail.com	
KENSINGTON PLACE SUBDIVISION, PHASE 2, CITY OF BRYANT, SALINE COUNTY, ARKANSAS	
CONTENTS: STREET PROFILES	
PROJECT NO:	16044
DATE:	AUG 22, 2017
SHEET NO:	4

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DATE	REVISION	BY
	1	
	2	
	3	

GNE Designing our client's success
GarNat Engineering, LLC
 P.O. Box 116 (72018)
 2909 Military Rd
 BRYANT, AR 72015
 Ph (501) 408-4650
 Fx (888) 900-3068
 garnaengineering@gmail.com

KENSINGTON PLACE SUBDIVISION,
 PHASE 2,
 CITY OF BRYANT,
 SALINE COUNTY, ARKANSAS

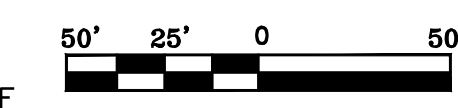


CONTENTS:
 DRAINAGE
 PROFILES

PROJECT NO:
 16044

DATE:
 AUG 22, 2017

SHEET NO:
 5



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KENSINGTON PLACE SUBDIVISION – PHASE 2
DRAINAGE CALCULATIONS – SUMMARY
9/18/2017

DESCRIPTION OF PROJECT

Kensington Place Subdivision is located in the City of Bryant, Saline County, Arkansas on Northlake Road. Phase 1 of this residential subdivision was approved by the City of Bryant in 2016 and is under construction. These calculations are for Phase 2 of this subdivision. There were some changes in the storm drainage design from the original designs submitted for Phase 1, which will be shown in the as-builts for Phase 1 once it is completed. The stormwater detention pond location was changed from the original design to be construction in the very southeast corner of Phase 2. These calculations include an analysis of the effects of this change.

These calculations are divided into the following sections:

Summary of Drainage Basins

Summary of Inlets

Summary of Pipes

Stormwater and Sanitary Analysis modeling for pre- and post-development conditions

Exhibit A – Pre-Development Drainage Basins

Exhibit B – Post-Development Drainage Basins

KENSINGTON PLACE SUBDIVISION – PHASE 2
DRAINAGE CALCULATIONS – SUMMARY
9/18/2017

SUMMARY OF DRAINAGE BASINS

PRE-DEVELOPMENT CONDITIONS

The existing site was a pasture / meadow prior to development into a residential subdivision. The entire area of Phase 2 of this subdivision is drained by one basin to a single checkpoint which is located in the vicinity of the proposed pond. This site was a mixture of forest, pasture, and meadow prior to development. Slopes range from 2% to 6% on most of the site. For the purposes of these calculations, the forested areas were assigned a runoff coefficient of 0.2, the pasture areas 0.5, and the meadow areas 0.4. See Exhibit A for the layout of the pre-development basins. The following is a summary of the basin data:

Area = 21.72 acres Weighted Runoff Coefficient = 0.36 Time of Concentration = 64 minutes

Peak Flow, 10 year = 19.40 cfs 25 year = 22.31 cfs

 50 year = 25.34 cfs 100 year = 28.37 cfs

POST-DEVELOPMENT CONDITIONS

As previously described, this site is being developed into a residential subdivision with about 3.5 homes every acre. For the purposes of these calculations, areas within the street right of ways were assigned a runoff coefficient of 0.90 and the areas developed into lots with homes a runoff coefficient of 0.60. Slopes will still range from 2% to 6%. Runoff drains from the developed areas of this phase into a pond located in the southeast corner of the subdivision. See Exhibit B for the layout of the post-development basins. The table on the following page shows the summary of data on the drainage basins.

KENSINGTON PLACE SUBDIVISION – PHASE 2

DRAINAGE CALCULATIONS – SUMMARY

9/18/2017

TABLE 1 - POST-DEVELOPMENT DRAINAGE BASIN DATA

10-YEAR RETURN STORM

Subbasin	Area	Weighted	Time of	10- YEAR Peak	25- YEAR Peak	50- YEAR Peak	100- YEAR Peak
ID	Runoff Coefficient (ac)	Concentration (days hh:mm:ss)	Runoff (cfs)	Runoff (cfs)	Runoff (cfs)	Runoff (cfs)	
1	2.38	0.6100	0 01:11:46	3.38	3.87	4.41	4.94
2	0.96	0.6300	0 00:50:36	1.74	2.01	2.87	3.27
3	1.34	0.6300	0 00:30:46	3.24	3.73	0.96	1.04
4	0.17	0.7500	0 00:14:33	0.69	0.81	1.37	1.48
5	0.46	0.6900	0 00:17:04	1.58	1.84	1.93	2.07
6	1.73	0.6000	0 00:31:16	3.94	4.55	4.94	5.31
8	2.66	0.6000	0 00:49:03	4.68	1.11	8.60	9.25
9	0.06	0.9000	0 00:05:00	0.38	1.00	1.44	1.55
10	0.87	0.6300	0 00:27:10	2.24	5.39	2.31	2.48
11	0.12	0.9000	0 00:05:00	0.79	0.42	9.01	10.19
12	0.16	0.9000	0 00:05:00	1.12	2.59	0.44	0.48
13	0.23	0.9000	0 00:05:00	1.57	0.87	2.26	2.54
14	0.74	0.7200	0 00:05:00	4.03	1.24	1.62	1.75
15	1.28	0.7200	0 00:05:00	7.03	1.74	1.84	1.98
16	0.21	0.7500	0 00:05:00	1.18	4.46	1.67	1.79
17	0.28	0.9000	0 00:05:00	1.89	7.77	2.55	2.91
18	3.51	0.6000	0 00:39:45	6.97	1.30	1.75	1.88
19	0.05	0.9000	0 00:05:00	0.36	2.09	2.87	3.26
20	0.19	0.9000	0 00:05:00	1.33	8.04	2.77	3.14
21	0.22	0.9000	0 00:05:00	1.51	0.40	1.02	1.15
22	0.20	0.9000	0 00:05:00	1.36	1.47	1.29	1.39
26	1.06	0.6000	0 00:35:44	2.23	1.66	4.15	4.73
27	0.58	0.7200	0 00:15:56	2.16	1.50	1.01	1.09
28	0.22	0.7200	0 00:17:36	0.79	2.29	0.99	1.06
29	0.15	0.9000	0 00:05:00	1.05	1.58	0.89	1.00
30	0.12	0.9000	0 00:05:00	0.83	2.57	2.02	2.30
31	0.12	0.9000	0 00:05:00	0.81	2.52	5.06	5.77
23A	0.88	0.6000	0 00:31:54	1.99	0.92	1.24	1.41
23B	0.21	0.9000	0 00:05:00	1.43	1.16	1.11	1.26
7A	0.38	0.6600	0 00:30:58	0.96	0.92	6.08	6.83
7B	0.28	0.7200	0 00:23:23	0.86	0.89	0.46	0.50

KENSINGTON PLACE SUBDIVISION – PHASE 2
DRAINAGE CALCULATIONS – SUMMARY
9/18/2017

SUMMARY OF INLETS

On Exhibit B you will see labels for all of the inlets for these calculations. The following is a summary of the data on the inlets. The flows shown are for the 25-year return storm.

TABLE 2 – INLET SUMMARY

Element ID	Inlet Location	Invert Elevation (ft)	Max (Rim) Elevation (ft)	Curb Opening (in)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)
CB-C1 (EXIST)	On Grade	483.78	487.16	96.00	4.77	3.76	1.01	78.78
CB-C2 (EXIST)	On Grade	490.63	495.14	48.00	1.84	0.69	1.16	37.23
CB-C3 (EXIST)	On Grade	490.95	495.16	48.00	0.81	0.41	0.40	50.26
CB-D1 (EXIST)	On Grade	484.10	487.17	96.00	3.76	3.25	0.51	86.32
CB-E1 (EXIST)	On Grade	487.00	491.64	96.00	0.88	0.88	0.00	100.00
CB-E2 (EXIST)	On Grade	496.73	501.05	48.00	1.24	1.06	0.18	85.16
CB-E3 (EXIST)	On Grade	497.60	501.00	48.00	1.74	1.30	0.43	75.04
CB-F1 (EXIST)	On Grade	487.57	491.28	96.00	1.41	1.41	0.00	100.00
CB-G2	On Sag	474.50	479.18	144.00	3.17	N/A	N/A	N/A
CB-G3	On Sag	474.85	478.79	144.00	5.39	N/A	N/A	N/A
CB-G4	On Grade	476.90	480.15	96.00	1.00	1.00	0.00	100.00
CB-G5	On Grade	482.36	485.61	96.00	2.00	2.00	0.00	99.95
CB-H1	On Grade	476.09	480.66	48.00	1.47	1.18	0.28	80.65
CB-H2	On Grade	483.38	485.12	48.00	1.76	1.51	0.25	86.01
CB-H3	On Grade	483.88	490.37	48.00	2.52	1.60	0.92	63.61
CB-H5	On Sag	485.87	488.55	144.00	12.22	N/A	N/A	N/A
CB-H6	On Sag	488.21	488.55	144.00	4.59	N/A	N/A	N/A
CB-I2	On Sag	476.91	479.97	144.00	0.42	N/A	N/A	N/A
CB-I3	On Grade	479.00	483.97	96.00	2.58	2.49	0.09	96.42
CB-K1	On Sag	478.07	482.00	144.00	8.04	N/A	N/A	N/A

Note that all catch basins are curb inlets and there is 100% interception of flow on all Sag Inlets.

KENSINGTON PLACE SUBDIVISION – PHASE 2
DRAINAGE CALCULATIONS – SUMMARY
9/18/2017

SUMMARY OF PIPES

All pipes used in this project are either RCP or HDPE pipes. Therefore, a manning's of 0.013 was used on all pipes in the analysis. A summary of the pipe data is in the following table. The flows shown are for the 25-year return storm.

TABLE 3 – SUMMARY OF PIPE INPUT

Element ID	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness
ST-C1 (EXIST)	CB-C1 (EXIST)	CONNECT-G	92.51	483.78	483.22	0.6000	24.000	0.0130
ST-C2 (EXIST)	CB-C2 (EXIST)	CB-C1 (EXIST)	200.00	490.63	483.88	3.3800	18.000	0.0130
ST-C3 (EXIST)	CB-C3 (EXIST)	CB-C2 (EXIST)	32.02	490.95	490.63	1.0000	18.000	0.0130
ST-CS1 (EXIST)	Jun-01	Out-01	24.64	473.29	473.16	0.5300	30.000	0.0130
ST-D1 (EXIST)	CB-D1 (EXIST)	CB-C1 (EXIST)	32.02	484.10	483.88	0.6900	18.000	0.0130
ST-E1 (EXIST)	CB-E1 (EXIST)	CONNECT-I	133.90	487.00	483.38	2.7000	18.000	0.0130
ST-E2 (EXIST)	CB-E2 (EXIST)	CB-E1 (EXIST)	200.00	496.73	487.10	4.8100	18.000	0.0130
ST-E3 (EXIST)	CB-E3 (EXIST)	CB-E2 (EXIST)	32.02	497.60	496.83	2.4000	18.000	0.0130
ST-F1 (EXIST)	CB-F1 (EXIST)	CB-E1 (EXIST)	32.02	487.57	487.10	1.4600	18.000	0.0130
ST-G1	CB-G2	POND1	72.10	474.50	473.92	0.8000	30.000	0.0130
ST-G2	CB-G3	CB-G2	31.99	474.85	474.50	1.0900	30.000	0.0130
ST-G3	CB-G4	CB-G3	49.09	476.90	474.95	3.9700	24.000	0.0130
ST-G4	CB-G5	CB-G4	238.61	482.36	476.90	2.2900	24.000	0.0130
ST-G5	CONNECT-G	CB-G5	145.74	483.22	482.35	0.6000	24.000	0.0130
ST-H1	CB-H1	CB-G3	190.63	476.09	474.95	0.6000	30.000	0.0130
ST-H2	FES-H2	CB-H1	252.90	482.37	476.19	2.4400	24.000	0.0130
ST-H2A	CB-H2	FES-H2	37.10	483.38	482.37	2.7200	24.000	0.0130
ST-H3	CB-H3	CB-H2	48.08	483.88	483.38	1.0400	24.000	0.0130
ST-H5	CB-H5	CB-H3	378.49	485.87	483.98	0.5000	24.000	0.0130
ST-H6	CB-H6	CB-H5	32.00	488.21	487.89	1.0000	18.000	0.0130
ST-I1	CB-I1	CB-H1	48.08	476.43	476.19	0.5000	24.000	0.0130
ST-I2	CB-I2	CB-I1	95.00	476.91	476.43	0.5100	24.000	0.0130
ST-I3	CB-I3	CB-I2	212.56	479.00	477.00	0.9400	18.000	0.0130
ST-I4	CONNECT-I	CB-I3	78.66	483.38	481.27	2.6900	18.000	0.0130
ST-K1	CB-K1	CB-I2	32.05	477.32	477.00	1.0000	18.000	0.0130

KENSINGTON PLACE SUBDIVISION – PHASE 2
DRAINAGE CALCULATIONS – SUMMARY
9/18/2017

TABLE 4 - SUMMARY OF PIPE RESULTS

Element ID	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio
ST-C1 (EXIST)	7.23	17.52	0.41	5.32	0.90	0.45
ST-C2 (EXIST)	1.05	19.30	0.05	7.08	0.24	0.16
ST-C3 (EXIST)	0.41	10.50	0.04	2.87	0.20	0.13
ST-CS1 (EXIST)	22.27	29.79	0.75	6.66	1.61	0.64
ST-D1 (EXIST)	3.25	8.71	0.37	4.57	0.63	0.42
ST-E1 (EXIST)	4.59	17.26	0.27	8.29	0.53	0.35
ST-E2 (EXIST)	2.33	23.05	0.10	8.44	0.32	0.21
ST-E3 (EXIST)	1.30	16.27	0.08	6.39	0.29	0.19
ST-F1 (EXIST)	1.41	12.70	0.11	4.74	0.34	0.22
ST-G1	32.61	36.79	0.89	8.48	1.83	0.73
ST-G2	30.37	42.90	0.71	9.48	1.55	0.62
ST-G3	9.82	45.08	0.22	11.48	0.63	0.32
ST-G4	9.18	34.22	0.27	9.24	0.71	0.35
ST-G5	7.23	17.44	0.41	5.30	0.90	0.45
ST-H1	26.98	31.72	0.85	7.36	1.77	0.71
ST-H2	17.56	35.36	0.50	11.33	1.00	0.50
ST-H2A	17.66	37.32	0.47	11.72	0.97	0.48
ST-H3	16.58	23.11	0.72	8.01	1.25	0.63
ST-H5	15.05	16.01	0.94	6.16	1.52	0.76
ST-H6	4.59	10.50	0.44	5.75	0.69	0.46
ST-I1	9.48	16.00	0.59	5.31	1.11	0.55
ST-I2	9.48	16.08	0.59	5.33	1.10	0.55
ST-I3	5.05	10.19	0.50	5.83	0.74	0.50
ST-I4	4.58	17.22	0.27	8.25	0.53	0.35
ST-K1	8.04	19.20	0.42	10.39	0.68	0.45

KENSINGTON PLACE SUBDIVISION – PHASE 2
DRAINAGE CALCULATIONS – SUMMARY
9/18/2017

POND SUMMARY

The pond in these calculations handles flows from both Phase 1 and 2 of Kensington Place Subdivision. The pond is located in the southeastern most corner of the subdivision property, just south of the sanitary sewer lift station. Water collected in the storm water system is discharged into the pond via a pipe culvert. A concrete control structure is constructed on the south edge of the pond. This control structure uses a slotted weir to limit the discharge through the structure to only that of the 25-year pre-development flow. Revised calculations for the pond will be submitted upon the completion of Phase 1. A summary of the pond inflow and outflow conditions are as follows:

The 25-year pre-development flow is 22.31 cfs

The 25-year post-development flow is 32.97 cfs

The 100-year pre-development flow is 28.37 cfs

The 100-year post-development flow is 40.21 cfs

A summary of the pond calculations for the 100-year event is on the following pages (including the overflow structure summary):

KENSINGTON PLACE SUBDIVISION – PHASE 2

DRAINAGE CALCULATIONS – SUMMARY

9/18/2017

POND CALCULATIONS (SOURCE: SSA)

Storage Node : POND1

Input Data

Invert Elevation (ft)	473.29
Max (Rim) Elevation (ft)	477.00
Max (Rim) Offset (ft)	3.71
Initial Water Elevation (ft)	473.29
Initial Water Depth (ft)	0.00
Ponded Area (ft ²)	0.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : POND1

Stage (ft)	Storage Area (ft ²)	Storage Volume (ft ³)
0	0	0.000
0.71	12615	4478.33
1.71	18216	19893.83
2.71	20116	39059.83
3.71	21896	60065.83

Outflow Weirs

Element ID	Weir Type	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
Weir-02	Rectangular	476.00	2.71	15.00	1.00	3.33

Outflow Orifices

Element ID	Orifice Type	Orifice Shape	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
Orifice-01	Side	Rectangular	26.50	21.00	0.00	0.63

KENSINGTON PLACE SUBDIVISION – PHASE 2

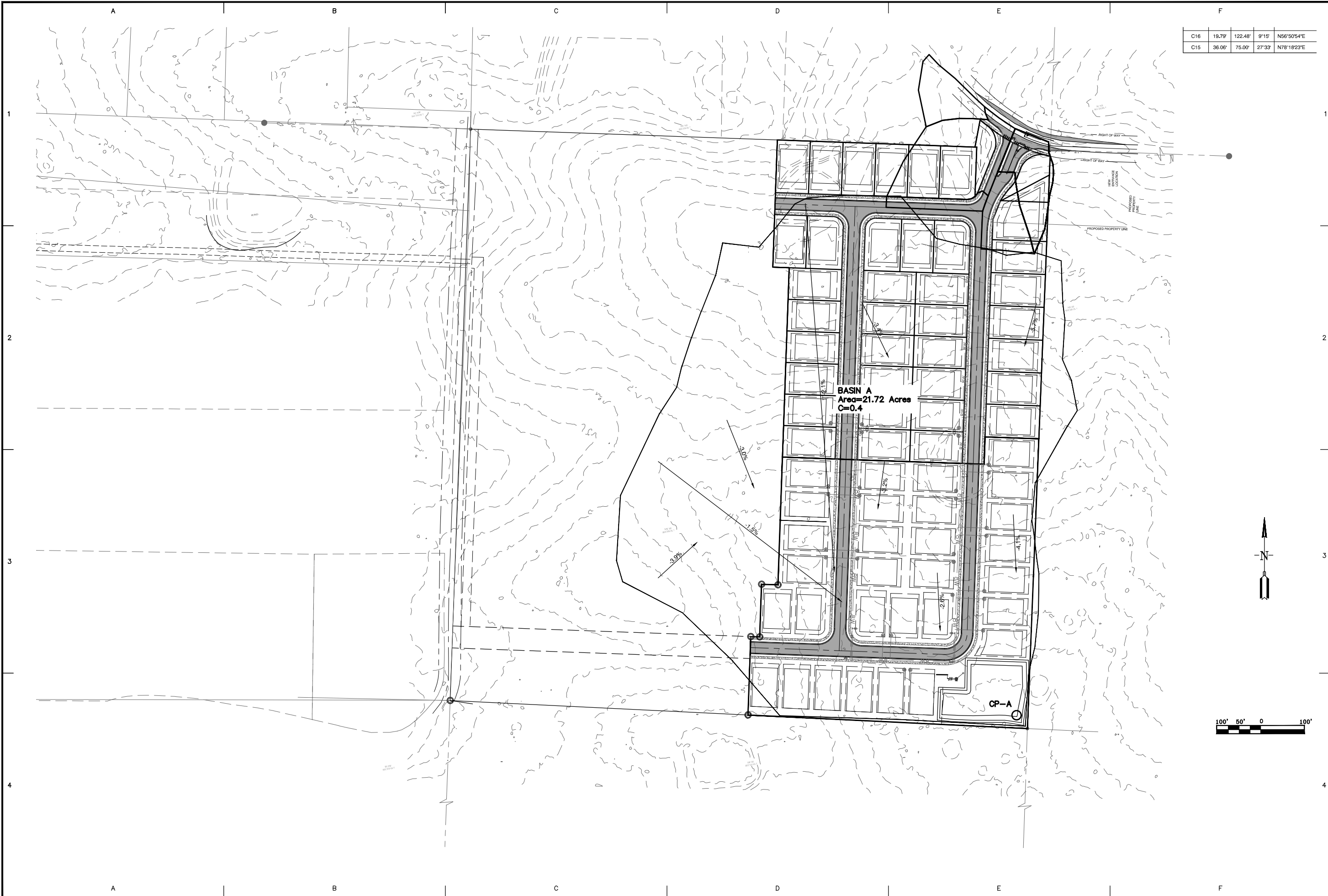
DRAINAGE CALCULATIONS – SUMMARY

9/18/2017

Output Summary

Results

Peak Inflow (cfs)	40.21
Peak Lateral Inflow (cfs)	4.94
Peak Outflow (cfs)	29.66
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	476.18
Max HGL Depth Attained (ft)	2.89
Average HGL Elevation Attained (ft)	473.48
Average HGL Depth Attained (ft)	0.19
Time of Max HGL Occurrence (days hh:mm)	0 00:50
Total Exfiltration Volume (1000-ft ³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00



BY	REVISION	DATE

GNE Designing our client's success
GarNat Engineering, LLC
 Ph (501) 408-4650
 Fx (888) 900-3068
 2909 Military Rd
 Benton, Arkansas 72015
 gnatengineering@gmail.com

KENSINGTON PLACE SUBDIVISION,
 PHASE 2,
 CITY OF BRYANT,
 SALINE COUNTY, ARKANSAS



CONTENTS:
 DRAINAGE
 MAP
 PRE-DEV

PROJECT NO:
 16044

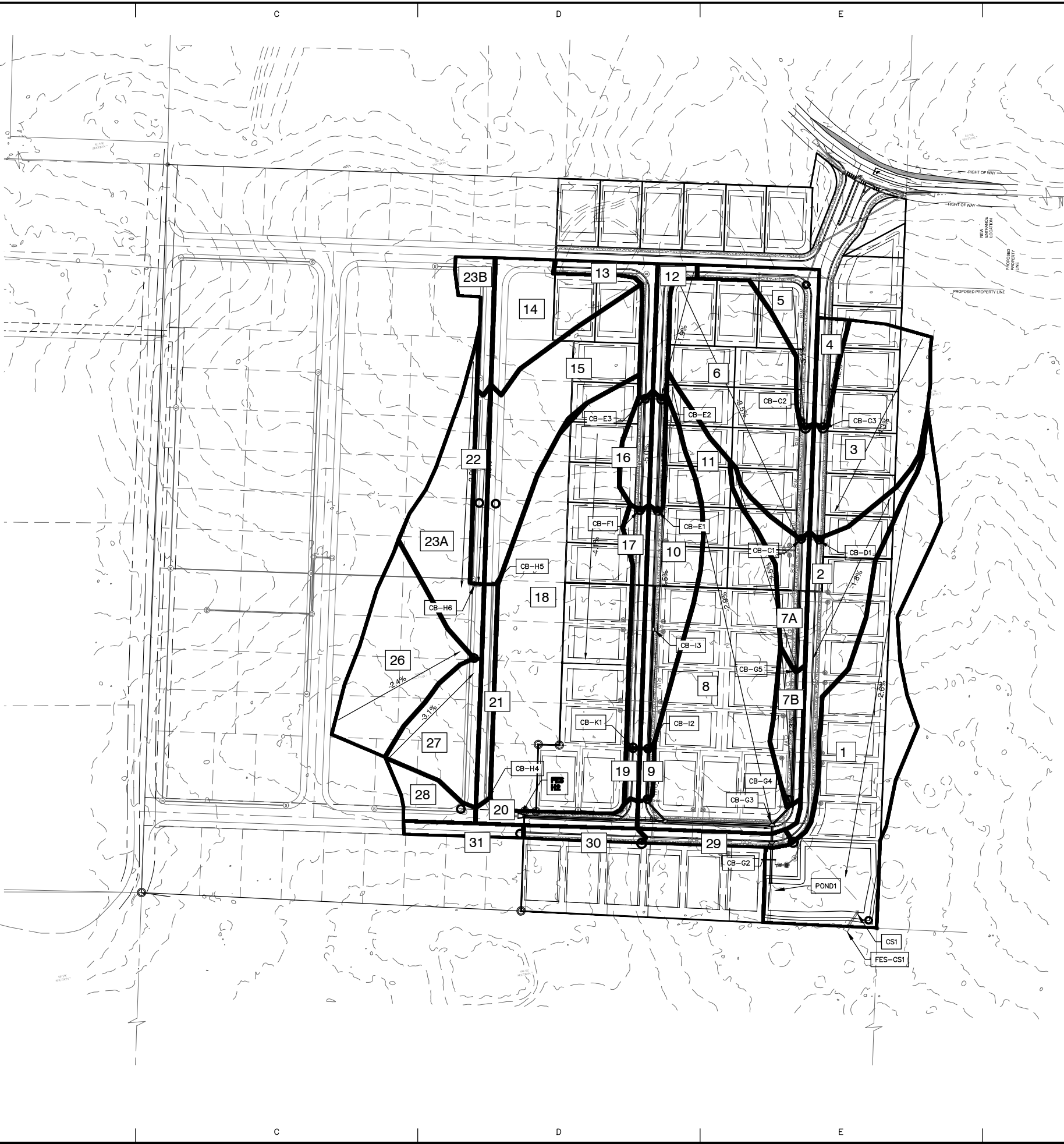
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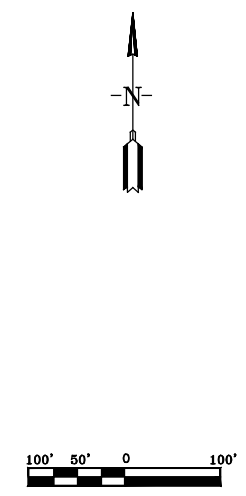
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DRAINAGE BASIN DATA

BASIN# (CFS)	AREA (ACRES)	RUNOFF, C	Q-25YR
1	2.38	0.61	3.87
2	0.96	0.63	2.01
3	1.34	0.63	3.73
4	0.17	0.75	0.81
5	0.46	0.69	1.84
6	1.73	0.60	4.55
7A	0.38	0.66	1.11
7B	0.28	0.72	1.00
8	2.66	0.60	5.39
9	0.06	0.90	0.42
10	0.87	0.63	2.59
11	0.12	0.90	0.87
12	0.16	0.90	1.24
13	0.23	0.90	1.74
14	0.74	0.74	4.46
15	1.28	0.72	7.77
16	0.21	0.75	1.30
17	0.28	0.90	2.09
18	3.51	0.60	8.04
19	0.05	0.90	0.40
20	0.19	0.90	1.47
21	0.22	0.72	1.33
22	0.20	0.90	1.50
23A	0.88	0.60	2.29
23B	0.21	0.90	1.58
26	1.06	0.60	2.57
27	0.58	0.72	3.51
28	0.22	0.72	1.35
29	0.15	0.90	1.16
30	0.12	0.90	0.92
31	0.12	0.90	0.89



C16	19.79'	122.48'	9'19"	N56°50'54"E
C15	36.06'	75.00'	27'33"	N78°18'23"E



BY		REVISION		DATE	
<p>GNE Designing our client's success GarNat Engineering, LLC Ph (501) 408-4650 P.O. Box 116 (72018) 2909 Military Rd Benton, Arkansas 72015 Fx (888) 900-3068 gnatengineering@gmail.com</p>					
<p>KENSINGTON PLACE SUBDIVISION, PHASE 2, CITY OF BRYANT, SALINE COUNTY, ARKANSAS</p>					
<p>CONTENTS: DRAINAGE MAP POST DEVELOPMENT</p>					
<p>PROJECT NO: 16044</p>					
<p>DATE: AUG 23, 2017</p>					
<p>SHEET NO: B</p>					

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Project Description

File Name 16044 Kensington Place Ph 2 Drainage Post-Dev 10 YEAR.SPF
Description J:\Projects\2016 Projects\16044 Kensington Place Subdivision Lee Pengelly\Drawings\DWG\Phase 2\KENSINGTON PLACE PHASE 2 R4.dwg

Project Options

Flow Units CFS
Elevation Type Elevation
Hydrology Method Rational
Time of Concentration (TOC) Method SCS TR-55
Link Routing Method Kinematic Wave
Enable Overflow Ponding at Nodes YES
Skip Steady State Analysis Time Periods NO

Analysis Options

Start Analysis On Aug 18, 2017 00:00:00
End Analysis On Aug 19, 2017 00:00:00
Start Reporting On Aug 18, 2017 00:00:00
Antecedent Dry Days 0 days
Runoff (Dry Weather) Time Step 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step 0 00:05:00 days hh:mm:ss
Reporting Time Step 0 00:05:00 days hh:mm:ss
Routing Time Step 30 seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins.....	31
Nodes.....	28
<i>Junctions</i>	5
<i>Outfalls</i>	2
<i>Flow Diversions</i>	0
<i>Inlets</i>	20
<i>Storage Nodes</i>	1
Links.....	41
<i>Channels</i>	14
<i>Pipes</i>	25
<i>Pumps</i>	0
<i>Orifices</i>	1
<i>Weirs</i>	1
<i>Outlets</i>	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period..... 10 year(s)

Subbasin Summary

SN Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1 (STORM-BASINS).1	2.38	0.6100	2.79	1.70	4.04	3.38	0 01:11:46
2 (STORM-BASINS).10	0.87	0.6300	1.85	1.16	1.01	2.24	0 00:27:10
3 (STORM-BASINS).11	0.12	0.9000	0.63	0.57	0.07	0.79	0 00:05:00
4 (STORM-BASINS).12	0.16	0.9000	0.63	0.57	0.09	1.12	0 00:05:00
5 (STORM-BASINS).13	0.23	0.9000	0.63	0.57	0.13	1.57	0 00:05:00
6 (STORM-BASINS).14	0.74	0.7200	0.63	0.46	0.34	4.03	0 00:05:00
7 (STORM-BASINS).15	1.28	0.7200	0.63	0.46	0.59	7.03	0 00:05:00
8 (STORM-BASINS).16	0.21	0.7500	0.63	0.48	0.10	1.18	0 00:05:00
9 (STORM-BASINS).17	0.28	0.9000	0.63	0.57	0.16	1.89	0 00:05:00
10 (STORM-BASINS).18	3.51	0.6000	2.20	1.32	4.63	6.97	0 00:39:45
11 (STORM-BASINS).19	0.05	0.9000	0.63	0.57	0.03	0.36	0 00:05:00
12 (STORM-BASINS).2	0.96	0.6300	2.43	1.53	1.47	1.74	0 00:50:36
13 (STORM-BASINS).20	0.19	0.9000	0.63	0.57	0.11	1.33	0 00:05:00
14 (STORM-BASINS).21	0.22	0.9000	0.63	0.57	0.13	1.51	0 00:05:00
15 (STORM-BASINS).22	0.20	0.9000	0.63	0.57	0.11	1.36	0 00:05:00
16 (STORM-BASINS).23A	0.88	0.6000	2.00	1.20	1.05	1.99	0 00:31:54
17 (STORM-BASINS).23B	0.21	0.9000	0.63	0.57	0.12	1.43	0 00:05:00
18 (STORM-BASINS).26	1.06	0.6000	2.09	1.26	1.33	2.23	0 00:35:44
19 (STORM-BASINS).27	0.58	0.7200	1.38	0.99	0.58	2.16	0 00:15:56
20 (STORM-BASINS).28	0.22	0.7200	1.45	1.05	0.23	0.79	0 00:17:36
21 (STORM-BASINS).29	0.15	0.9000	0.63	0.57	0.09	1.05	0 00:05:00
22 (STORM-BASINS).3	1.34	0.6300	1.97	1.24	1.66	3.24	0 00:30:46
23 (STORM-BASINS).30	0.12	0.9000	0.63	0.57	0.07	0.83	0 00:05:00
24 (STORM-BASINS).31	0.12	0.9000	0.63	0.57	0.07	0.81	0 00:05:00
25 (STORM-BASINS).4	0.17	0.7500	1.30	0.97	0.17	0.69	0 00:14:33
26 (STORM-BASINS).5	0.46	0.6900	1.42	0.98	0.45	1.58	0 00:17:04
27 (STORM-BASINS).6	1.73	0.6000	1.99	1.19	2.06	3.94	0 00:31:16
28 (STORM-BASINS).7A	0.38	0.6600	1.98	1.31	0.50	0.96	0 00:30:58
29 (STORM-BASINS).7B	0.28	0.7200	1.69	1.22	0.34	0.86	0 00:23:23
30 (STORM-BASINS).8	2.66	0.6000	2.39	1.43	3.82	4.68	0 00:49:03
31 (STORM-BASINS).9	0.06	0.9000	0.63	0.57	0.03	0.38	0 00:05:00

Node Summary

SN Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation	Ponded Area	Peak Inflow	Max HGL Elevation Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded	
		(ft)	(ft)	(ft)	(ft)	(ft²)	(cfs)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)	
1	CB-I1	Junction	476.43	480.49	476.43	480.49	0.00	8.21	477.45	0.00	3.04	0 00:00	0.00	0.00
2	CONNECT-G	Junction	483.22	485.22	483.22	485.22	0.00	6.59	484.08	0.00	1.15	0 00:00	0.00	0.00
3	CONNECT-I	Junction	483.38	489.38	483.38	489.38	0.00	4.19	483.89	0.00	5.50	0 00:00	0.00	0.00
4	FES-H2	Junction	482.37	485.12	482.37	485.12	0.00	15.90	483.31	0.00	1.81	0 00:00	0.00	0.00
5	Jun-01	Junction	473.29	477.00	473.29	477.00	0.00	19.90	474.79	0.00	2.21	0 00:00	0.00	0.00
6	Out-01	Outfall	473.16					19.90	474.66					
7	Out-1ST-G3	Outfall	475.00					0.00	475.00					
8	POND1	Storage Node	473.29	477.00	473.29		0.00	29.48	475.46			0.00	0.00	

Link Summary

SN Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/Total Depth Ratio	Total Time Reported (min)	Surcharged Condition
1	ST-C1	Pipe	CB-C1 (EXIST) CONNECT-G	92.51	483.78	483.22	0.6000	24.000	0.0130	6.59	17.52	0.38	5.18	0.85	0.42	0.00	Calculated
2	ST-C2	Pipe	CB-C2 (EXIST) CB-C1 (EXIST)	200.00	490.63	483.88	3.3800	18.000	0.0130	0.95	19.30	0.05	6.85	0.23	0.15	0.00	Calculated
3	ST-C3	Pipe	CB-C3 (EXIST) CB-C2 (EXIST)	32.02	490.95	490.63	1.0000	18.000	0.0130	0.37	10.50	0.03	2.79	0.19	0.13	0.00	Calculated
4	ST-CS1	Pipe	Jun-01 Out-01	24.64	473.29	473.16	0.5300	30.000	0.0130	19.90	29.79	0.67	6.50	1.50	0.60	0.00	Calculated
5	ST-D1	Pipe	CB-D1 (EXIST) CB-C1 (EXIST)	32.02	484.10	483.88	0.6900	18.000	0.0130	2.95	8.71	0.34	4.45	0.60	0.40	0.00	Calculated
6	ST-E1 (2)	Pipe	CB-E1 (EXIST) CONNECT-I	133.90	487.00	483.38	2.7000	18.000	0.0130	4.19	17.26	0.24	8.08	0.50	0.34	0.00	Calculated
7	ST-E2 (EXIST)	Pipe	CB-E2 (EXIST) CB-E1 (EXIST)	200.00	496.73	487.10	4.8100	18.000	0.0130	2.20	23.05	0.10	8.30	0.31	0.21	0.00	Calculated
8	ST-E3 (EXIST)	Pipe	CB-E3 (EXIST) CB-E2 (EXIST)	32.02	497.60	496.83	2.4000	18.000	0.0130	1.23	16.27	0.08	6.26	0.28	0.19	0.00	Calculated
9	ST-F1 (EXIST)	Pipe	CB-F1 (EXIST) CB-E1 (EXIST)	32.02	487.57	487.10	1.4600	18.000	0.0130	1.24	12.70	0.10	4.57	0.32	0.21	0.00	Calculated
10	ST-G1	Pipe	CB-G2 POND1	72.10	474.50	473.92	0.8000	30.000	0.0130	29.16	36.79	0.79	8.33	1.68	0.67	0.00	Calculated
11	ST-G2	Pipe	CB-G3 CB-G2	31.99	474.85	474.50	1.0900	30.000	0.0130	27.15	42.90	0.63	9.24	1.44	0.58	0.00	Calculated
12	ST-G3	Pipe	CB-G4 CB-G3	49.09	476.90	474.95	3.9700	24.000	0.0130	8.63	45.08	0.19	11.06	0.59	0.30	0.00	Calculated
13	ST-G4	Pipe	CB-G5 CB-G4	238.61	482.36	476.90	2.2900	24.000	0.0130	8.08	34.22	0.24	8.92	0.66	0.33	0.00	Calculated
14	ST-G5	Pipe	CONNECT-G CB-G5	145.74	483.22	482.35	0.6000	24.000	0.0130	6.59	17.44	0.38	5.17	0.85	0.43	0.00	Calculated
15	ST-H1	Pipe	CB-H1 CB-G3	190.63	476.09	474.95	0.6000	30.000	0.0130	24.30	31.72	0.77	7.21	1.64	0.65	0.00	Calculated
16	ST-H2	Pipe	FES-H2 CB-H1	252.90	482.37	476.19	2.4400	24.000	0.0130	15.78	35.36	0.45	11.02	0.93	0.47	0.00	Calculated
17	ST-H2A	Pipe	CB-H2 FES-H2	37.10	483.38	482.37	2.7200	24.000	0.0130	15.90	37.32	0.43	11.41	0.91	0.46	0.00	Calculated
18	ST-H3	Pipe	CB-H3 CB-H2	48.08	483.88	483.38	1.0400	24.000	0.0130	15.00	23.11	0.65	7.83	1.17	0.59	0.00	Calculated
19	ST-H5	Pipe	CB-H5 CB-H3	378.49	485.87	483.98	0.5000	24.000	0.0130	13.57	16.01	0.85	6.03	1.40	0.70	0.00	Calculated
20	ST-H6	Pipe	CB-H6 CB-H5	32.00	488.21	487.89	1.0000	18.000	0.0130	3.98	10.50	0.38	5.53	0.64	0.43	0.00	Calculated
21	ST-I1	Pipe	CB-I1 CB-H1	48.08	476.43	476.19	0.5000	24.000	0.0130	8.21	16.00	0.51	5.13	1.02	0.51	0.00	Calculated
22	ST-I2	Pipe	CB-I2 CB-I1	95.00	476.91	476.43	0.5100	24.000	0.0130	8.21	16.08	0.51	5.15	1.01	0.51	0.00	Calculated
23	ST-I3	Pipe	CB-I3 CB-I2	212.56	479.00	477.00	0.9400	18.000	0.0130	4.58	10.19	0.45	5.69	0.70	0.47	0.00	Calculated
24	ST-I4	Pipe	CONNECT-I CB-I3	78.66	483.38	481.27	2.6900	18.000	0.0130	4.19	17.22	0.24	8.05	0.50	0.34	0.00	Calculated
25	ST-K1	Pipe	CB-K1 CB-I2	32.05	477.32	477.00	1.0000	18.000	0.0130	6.97	19.20	0.36	9.99	0.63	0.42	0.00	Calculated
26	Gutter-05	Channel	CB-C3 (EXIST) CB-D1 (EXIST)	200.35	495.00	487.00	3.9900	6.000	0.0130	0.30	9.52	0.03	3.28	0.14	0.27	0.00	
27	Gutter-06	Channel	CB-C2 (EXIST) CB-C1 (EXIST)	200.99	495.00	487.00	3.9800	6.000	0.0130	0.92	9.50	0.10	3.75	0.21	0.41	0.00	
28	Gutter-07	Channel	CB-C1 (EXIST) CB-G5	239.28	487.00	485.61	0.5800	6.000	0.0130	0.64	3.83	0.17	1.71	0.25	0.50	0.00	
29	Gutter-08	Channel	CB-G5 CB-G4	240.40	485.61	480.15	2.2700	6.000	0.0320	0.00	7.18	0.00	0.00	0.00	0.00	0.00	
30	Gutter-09	Channel	CB-G4 CB-G3	57.48	480.15	478.65	2.6100	6.000	0.0320	0.00	7.33	0.00	0.00	0.00	0.00	0.00	
31	Gutter-10	Channel	CB-H1 CB-G3	192.99	480.66	478.79	0.9700	6.000	0.0320	0.12	4.69	0.03	2.27	0.12	0.23	0.00	
32	Gutter-12	Channel	CB-I3 CB-I2	213.95	483.97	479.50	2.0900	6.000	0.0320	0.02	6.51	0.00	1.36	0.05	0.10	0.00	
33	Gutter-13	Channel	CB-E1 (EXIST) CB-I3	213.94	491.00	483.97	3.2900	6.000	0.0320	0.00	9.03	0.00	0.00	0.00	0.00	0.00	
34	Gutter-14	Channel	CB-E2 (EXIST) CB-E1 (EXIST)	201.82	500.50	491.00	4.7100	6.000	0.0320	0.08	10.29	0.01	3.62	0.07	0.15	0.00	
35	Gutter-15	Channel	CB-E3 (EXIST) CB-F1 (EXIST)	201.21	500.50	491.00	4.7200	6.000	0.0320	0.24	10.48	0.02	4.35	0.11	0.23	0.00	
36	Gutter-16	Channel	CB-F1 (EXIST) CB-K1	425.27	491.00	482.00	2.1200	6.000	0.0320	0.00	7.04	0.00	0.00	0.00	0.00	0.00	
37	Gutter-17	Channel	CB-H2 CB-H1	292.35	485.12	480.66	1.5200	6.000	0.0320	0.09	5.88	0.01	1.87	0.09	0.18	0.00	
38	Gutter-23	Channel	CB-D1 (EXIST) CB-G2	587.46	487.00	479.00	1.3600	6.000	0.0320	0.21	5.55	0.04	2.35	0.14	0.27	0.00	
39	Gutter-26	Channel	CB-H3 CB-H2	57.06	490.37	485.12	9.2000	6.000	0.0320	0.67	14.45	0.05	3.32	0.16	0.31	0.00	
40	Orifice-01	Orifice	POND1 Jun-01		473.29	473.29		26.500		19.90							
41	Weir-02	Weir	POND1 Jun-01		473.29	473.29				0.00							

Inlet Summary

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft ²)	Peak Flow (cfs)	Peak Flow Intercepted (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	
1 CB-C1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.78	487.16	483.78	N/A	4.14	3.45	0.69	83.41	12.00	9.58	487.41
2 CB-C2 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	490.63	495.14	490.63	N/A	1.58	0.62	0.95	39.58	12.00	3.73	495.35
3 CB-C3 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	490.95	495.16	490.95	N/A	0.69	0.37	0.33	52.99	12.00	2.60	495.31
4 CB-D1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	484.10	487.17	484.10	N/A	3.26	2.95	0.31	90.54	12.00	8.69	487.40
5 CB-E1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	487.00	491.64	487.00	N/A	0.79	0.79	0.00	100.00	12.00	4.49	491.79
6 CB-E2 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	496.73	501.05	496.73	N/A	1.12	0.99	0.13	88.23	12.00	5.43	501.22
7 CB-E3 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	497.60	501.00	497.60	N/A	1.57	1.23	0.34	78.39	12.00	6.35	501.19
8 CB-F1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	487.57	491.28	487.57	N/A	1.24	1.24	0.00	100.00	12.00	5.67	491.45
9 CB-G2	FHWA HEC-22	GENERIC	N/A	On Sag	1	474.50	479.18	474.50	0.00	2.86	N/A	N/A	N/A	12.00	9.21	479.93
10 CB-G3	FHWA HEC-22	GENERIC	N/A	On Sag	1	474.85	478.79	474.85	0.00	4.68	N/A	N/A	N/A	12.00	12.80	479.61
11 CB-G4	FHWA HEC-22	GENERIC	N/A	On Grade	1	476.90	480.15	476.90	N/A	0.86	0.86	0.00	100.00	12.00	4.72	480.31
12 CB-G5	FHWA HEC-22	GENERIC	N/A	On Grade	1	482.36	485.61	482.36	N/A	1.53	1.53	0.00	100.00	12.00	6.29	485.80
13 CB-H1	FHWA HEC-22	GENERIC	N/A	On Grade	1	476.09	480.66	476.09	N/A	1.33	1.10	0.22	83.25	12.00	5.86	480.84
14 CB-H2	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.38	485.12	483.38	N/A	1.41	1.30	0.11	92.29	12.00	7.68	485.33
15 CB-H3	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.88	490.37	483.88	N/A	2.18	1.48	0.70	68.01	12.00	7.32	490.58
16 CB-H5	FHWA HEC-22	GENERIC	N/A	On Sag	1	485.87	488.55	485.87	0.00	11.06	N/A	N/A	N/A	12.00	22.75	489.57
17 CB-H6	FHWA HEC-22	GENERIC	N/A	On Sag	1	488.21	488.55	488.21	0.00	3.98	N/A	N/A	N/A	12.00	11.51	489.34
18 CB-I2	FHWA HEC-22	GENERIC	N/A	On Sag	1	476.91	479.97	476.91	0.00	0.38	N/A	N/A	N/A	12.00	1.72	480.21
19 CB-I3	FHWA HEC-22	GENERIC	N/A	On Grade	1	479.00	483.97	479.00	N/A	2.24	2.20	0.03	98.55	12.00	7.40	484.18
20 CB-K1	FHWA HEC-22	GENERIC	N/A	On Sag	1	478.07	482.00	478.07	0.00	6.97	N/A	N/A	N/A	12.00	16.72	482.93

Subbasin Hydrology

Subbasin : {STORM-BASINS}.1

Input Data

Area (ac) 2.38
Weighted Runoff Coefficient 0.6100

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
Residential	1.66	-	0.70
Pasture	0.71	-	0.40
Composite Area & Weighted Runoff Coeff.	2.37		0.61

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8}) / ((P^{0.5}) * (S_f^{0.4})))$$

Where :

T_c = Time of Concentration (hr)
n = Manning's roughness
L_f = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
S_f = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (S_f^{0.5}) (unpaved surface)
V = 20.3282 * (S_f^{0.5}) (paved surface)
V = 15.0 * (S_f^{0.5}) (grassed waterway surface)
V = 10.0 * (S_f^{0.5}) (nearly bare & untilled surface)
V = 9.0 * (S_f^{0.5}) (cultivated straight rows surface)
V = 7.0 * (S_f^{0.5}) (short grass pasture surface)
V = 5.0 * (S_f^{0.5}) (woodland surface)
V = 2.5 * (S_f^{0.5}) (forest w/heavy litter surface)
T_c = (L_f / V) / (3600 sec/hr)

Where:

T_c = Time of Concentration (hr)
L_f = Flow Length (ft)
V = Velocity (ft/sec)
S_f = Slope (ft/ft)

Channel Flow Equation :

$$V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n$$

R = A_q / W_p
T_c = (L_f / V) / (3600 sec/hr)

Where :

T_c = Time of Concentration (hr)
L_f = Flow Length (ft)
R = Hydraulic Radius (ft)
A_q = Flow Area (ft²)
W_p = Wetted Perimeter (ft)
V = Velocity (ft/sec)
S_f = Slope (ft/ft)
n = Manning's roughness

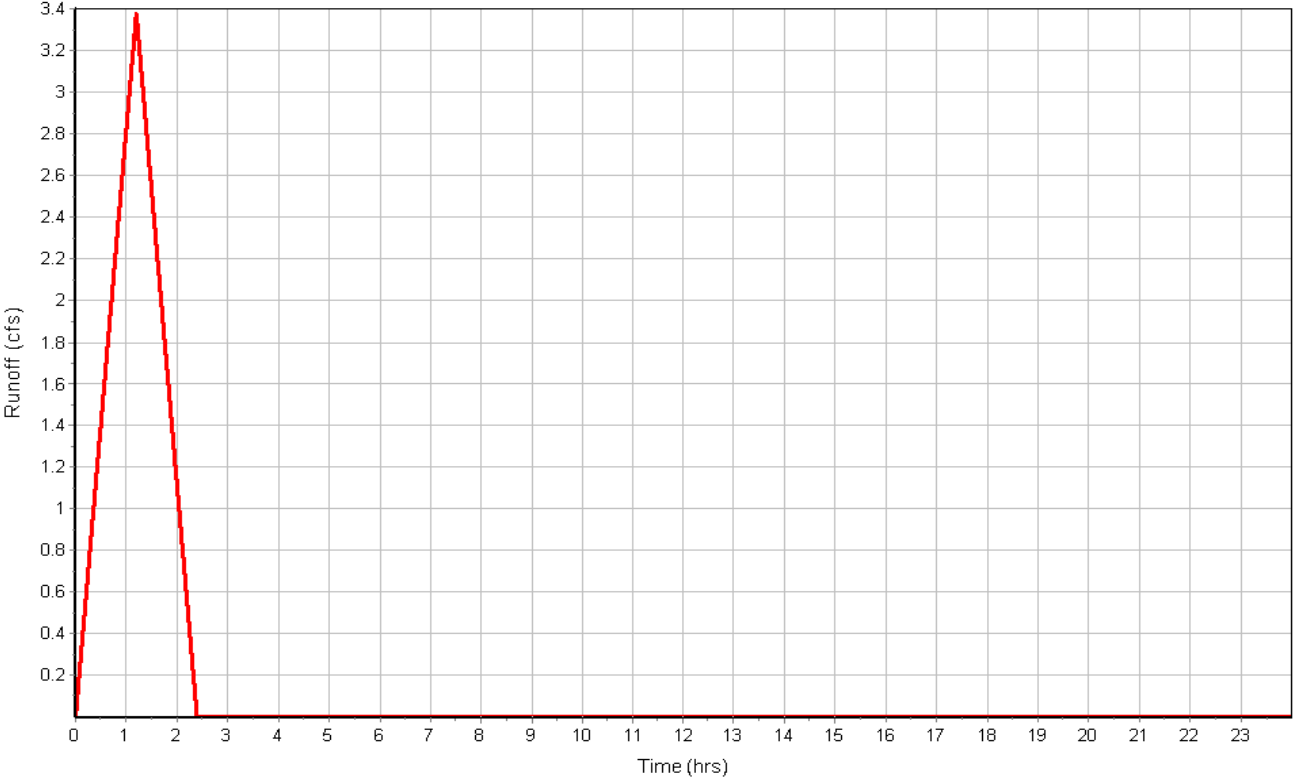
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	1221.57	0.00	0.00
Slope (%) :	2.6	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.28	0.00	0.00
Computed Flow Time (min) :	71.78	0.00	0.00
Total TOC (min)	71.78		

Subbasin Runoff Results

Total Rainfall (in)	2.79
Total Runoff (in)	1.70
Peak Runoff (cfs)	3.38
Rainfall Intensity	2.329
Weighted Runoff Coefficient	0.6100
Time of Concentration (days hh:mm:ss)	0 01:11:47

Subbasin : {STORM-BASINS}.1

Runoff Hydrograph



Subbasin : {STORM-BASINS}.10

Input Data

Area (ac) 0.87
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.78	-	0.60
-	0.09	-	0.90
Composite Area & Weighted Runoff Coeff.	0.87		0.63

Time of Concentration

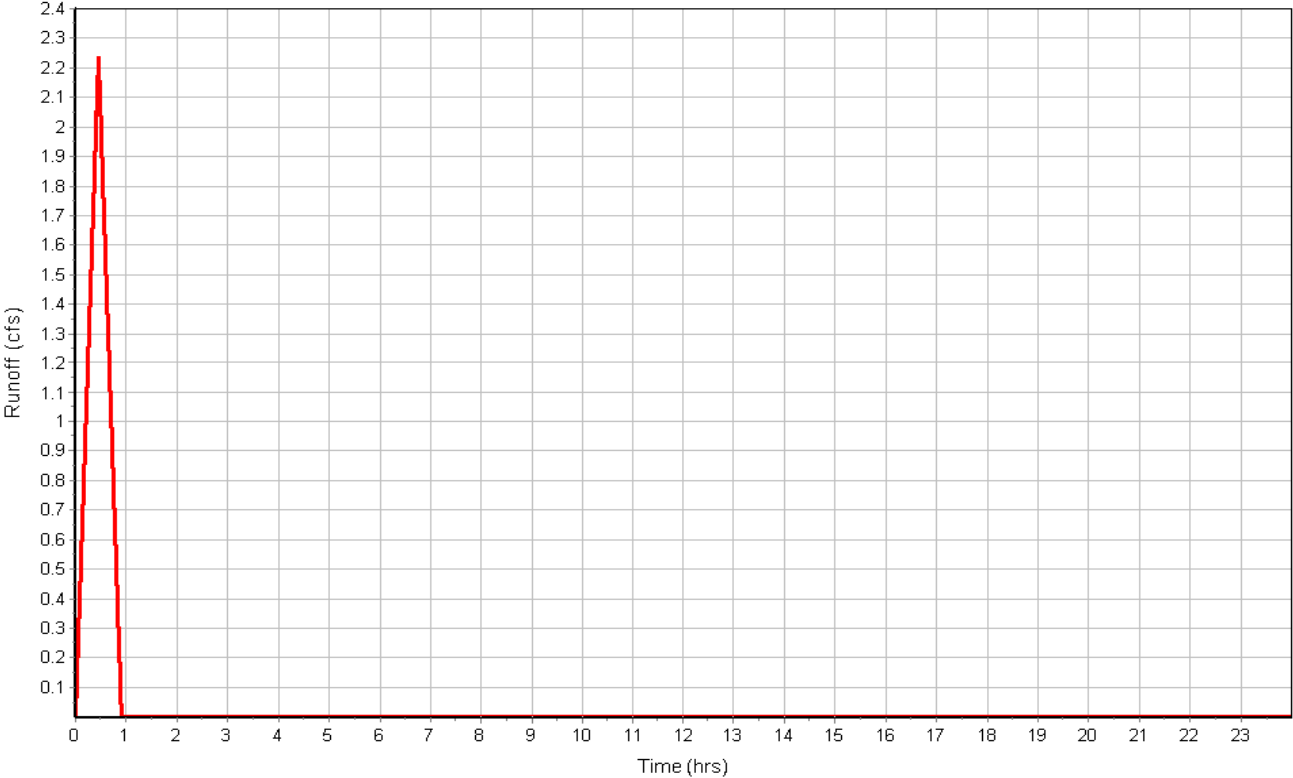
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	421.06	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.26	0.00	0.00
Computed Flow Time (min) :	27.18	0.00	0.00
Total TOC (min)	27.18		

Subbasin Runoff Results

Total Rainfall (in) 1.85
 Total Runoff (in) 1.16
 Peak Runoff (cfs) 2.24
 Rainfall Intensity 4.074
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:27:11

Subbasin : {STORM-BASINS}.10

Runoff Hydrograph



Subbasin : {STORM-BASINS}.11

Input Data

Area (ac) 0.12
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

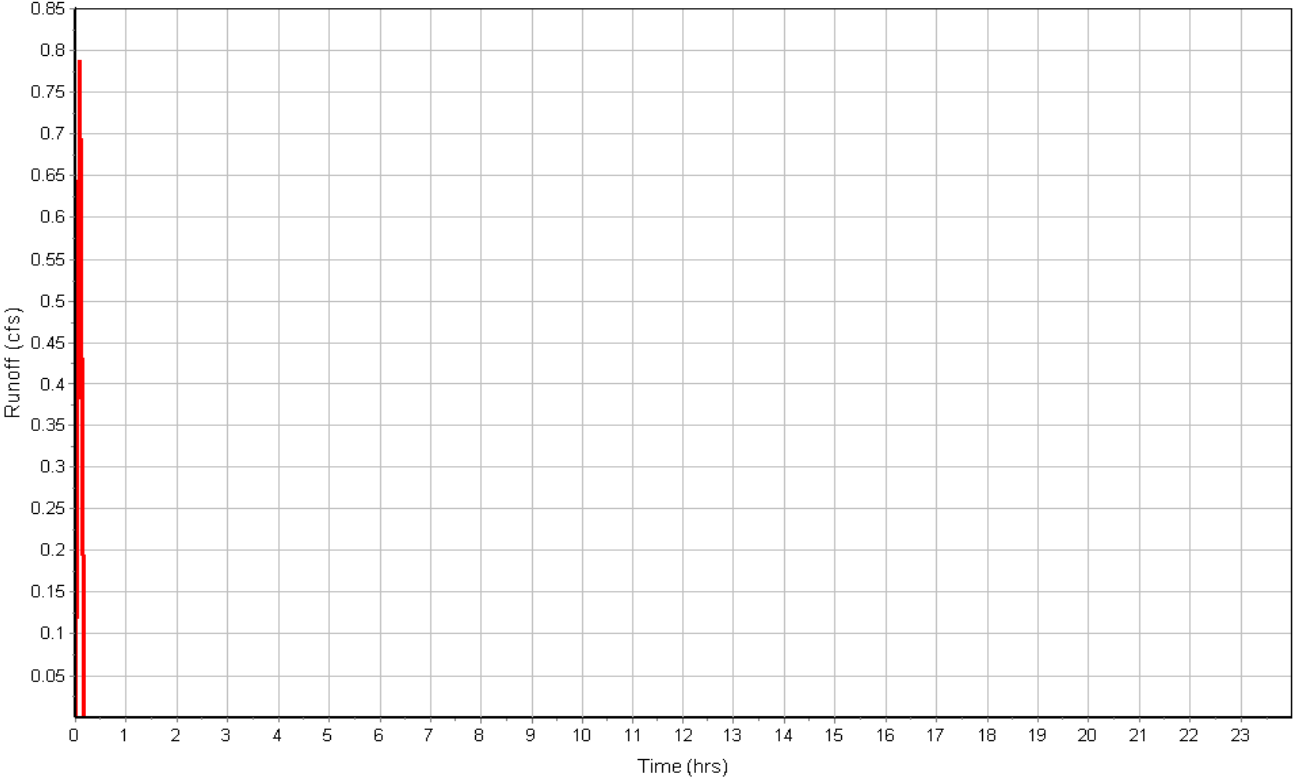
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	251.93	0.00	0.00
Slope (%) :	4.7	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	4.41	0.00	0.00
Computed Flow Time (min) :	0.95	0.00	0.00
Total TOC (min)0.95			

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 0.79
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:00:57

Subbasin : {STORM-BASINS}.11

Runoff Hydrograph



Subbasin : {STORM-BASINS}.12

Input Data

Area (ac) 0.16
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.16	-	0.90
Composite Area & Weighted Runoff Coeff.	0.16		0.90

Time of Concentration

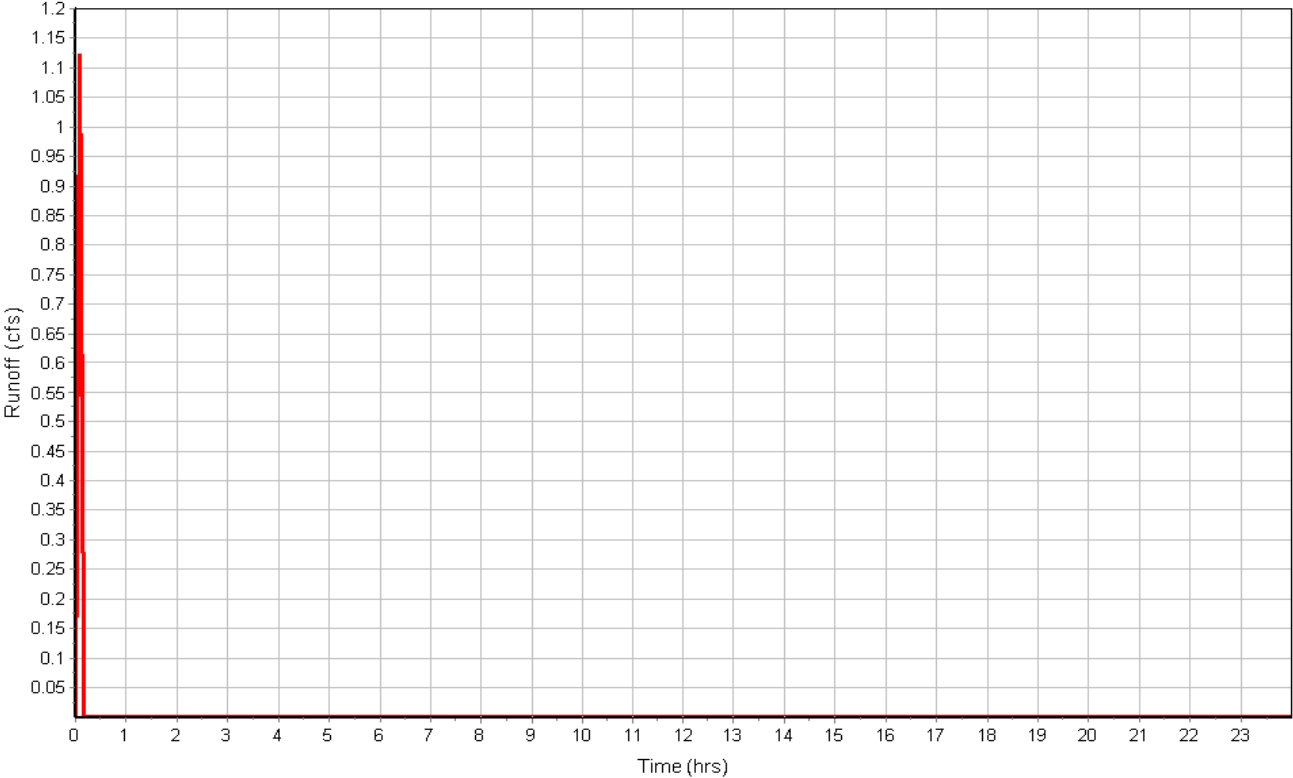
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	261.41	0.00	0.00
Slope (%) :	1.9	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.80	0.00	0.00
Computed Flow Time (min) :	1.56	0.00	0.00
Total TOC (min)	1.56		

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 1.12
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:34

Subbasin : {STORM-BASINS}.12

Runoff Hydrograph



Subbasin : {STORM-BASINS}.13

Input Data

Area (ac) 0.23
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.23	-	0.90
Composite Area & Weighted Runoff Coeff.	0.23		0.90

Time of Concentration

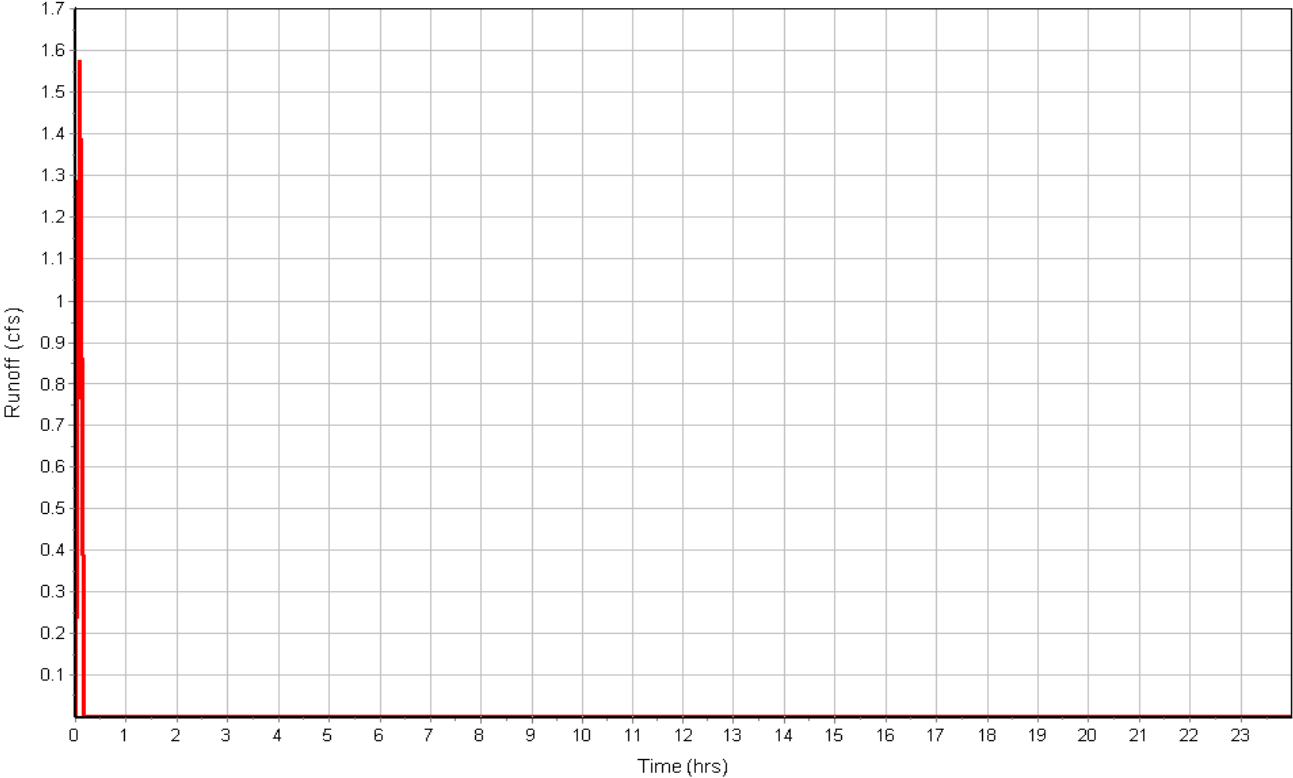
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	407.22	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	2.36	0.00	0.00
Total TOC (min)	2.36		

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 1.57
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:02:22

Subbasin : {STORM-BASINS}.13

Runoff Hydrograph



Subbasin : {STORM-BASINS}.14

Input Data

Area (ac) 0.74
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.74	-	0.72
Composite Area & Weighted Runoff Coeff.	0.74		0.72

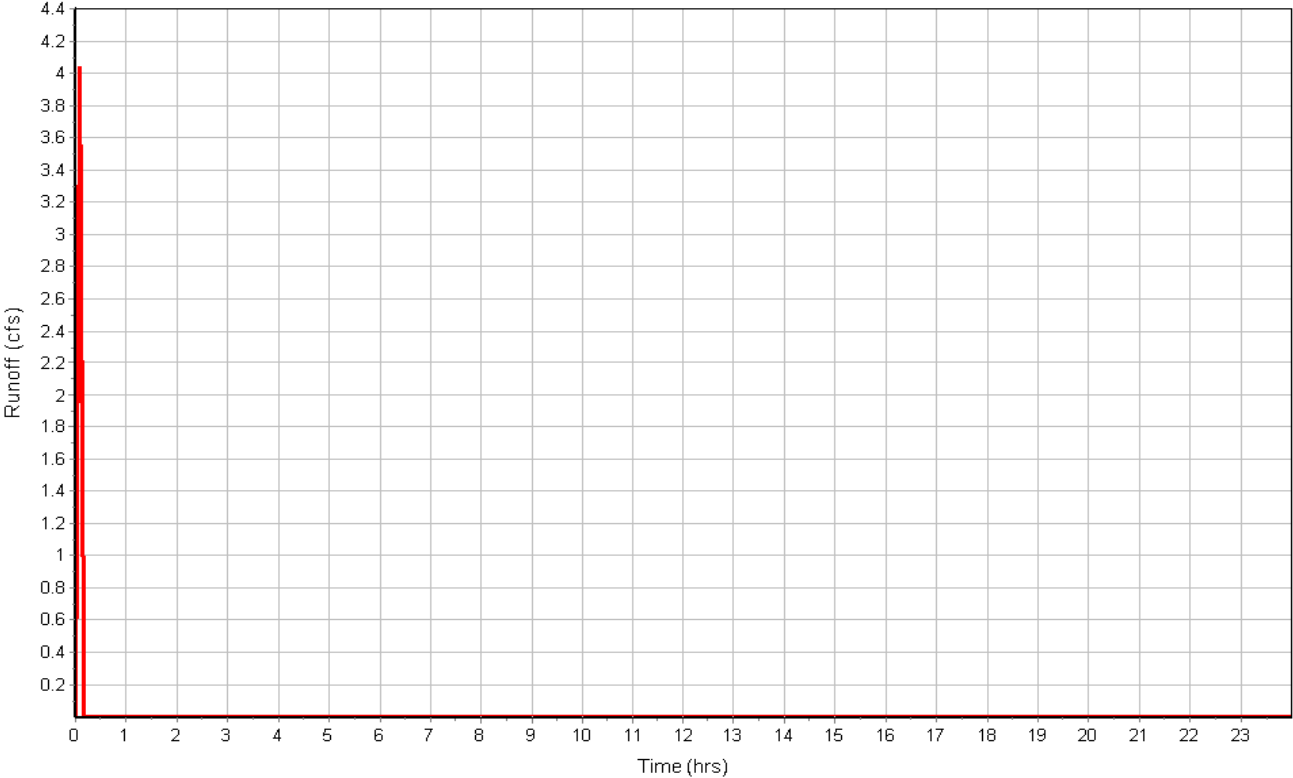
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.63
Total Runoff (in) 0.46
Peak Runoff (cfs) 4.03
Rainfall Intensity 7.600
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.14

Runoff Hydrograph



Subbasin : {STORM-BASINS}.15

Input Data

Area (ac) 1.28
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.28	-	0.72
Composite Area & Weighted Runoff Coeff.	1.28		0.72

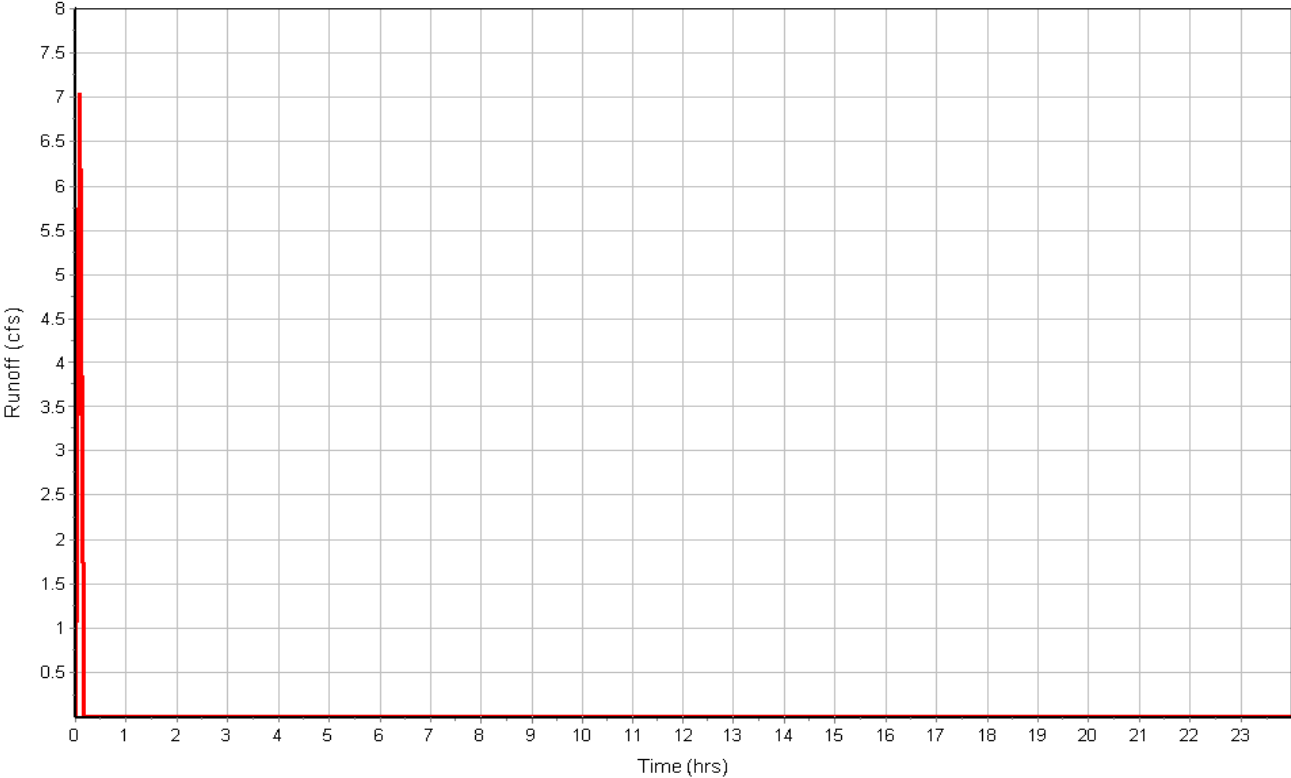
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.63
Total Runoff (in) 0.46
Peak Runoff (cfs) 7.03
Rainfall Intensity 7.600
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.15

Runoff Hydrograph



Subbasin : {STORM-BASINS}.16

Input Data

Area (ac) 0.21
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.10	-	0.90
-	0.10	-	0.60
Composite Area & Weighted Runoff Coeff.	0.20		0.75

Time of Concentration

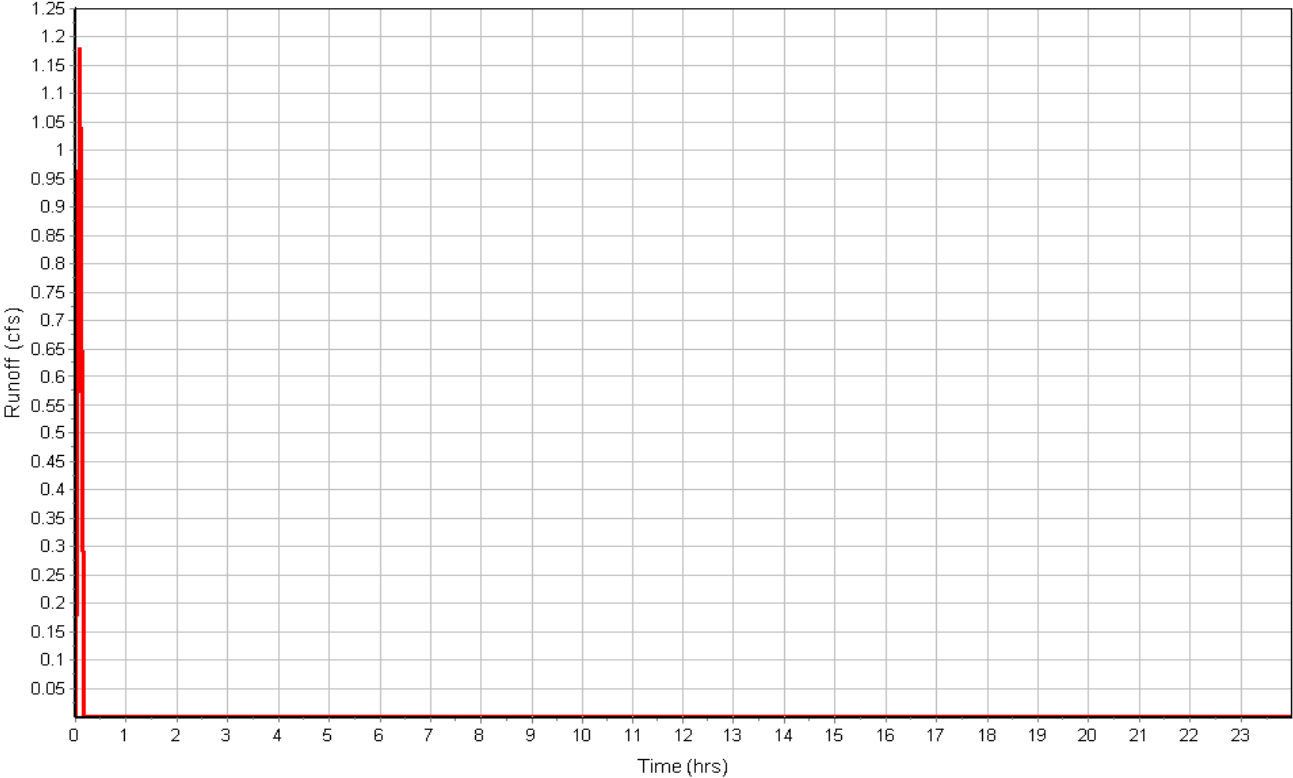
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	45.99	0.00	0.00
Slope (%) :	5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.19	0.00	0.00
Computed Flow Time (min) :	4.01	0.00	0.00
Total TOC (min)	4.01		

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.48
 Peak Runoff (cfs) 1.18
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:04:01

Subbasin : {STORM-BASINS}.16

Runoff Hydrograph



Subbasin : {STORM-BASINS}.17

Input Data

Area (ac) 0.28
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.28	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.90

Time of Concentration

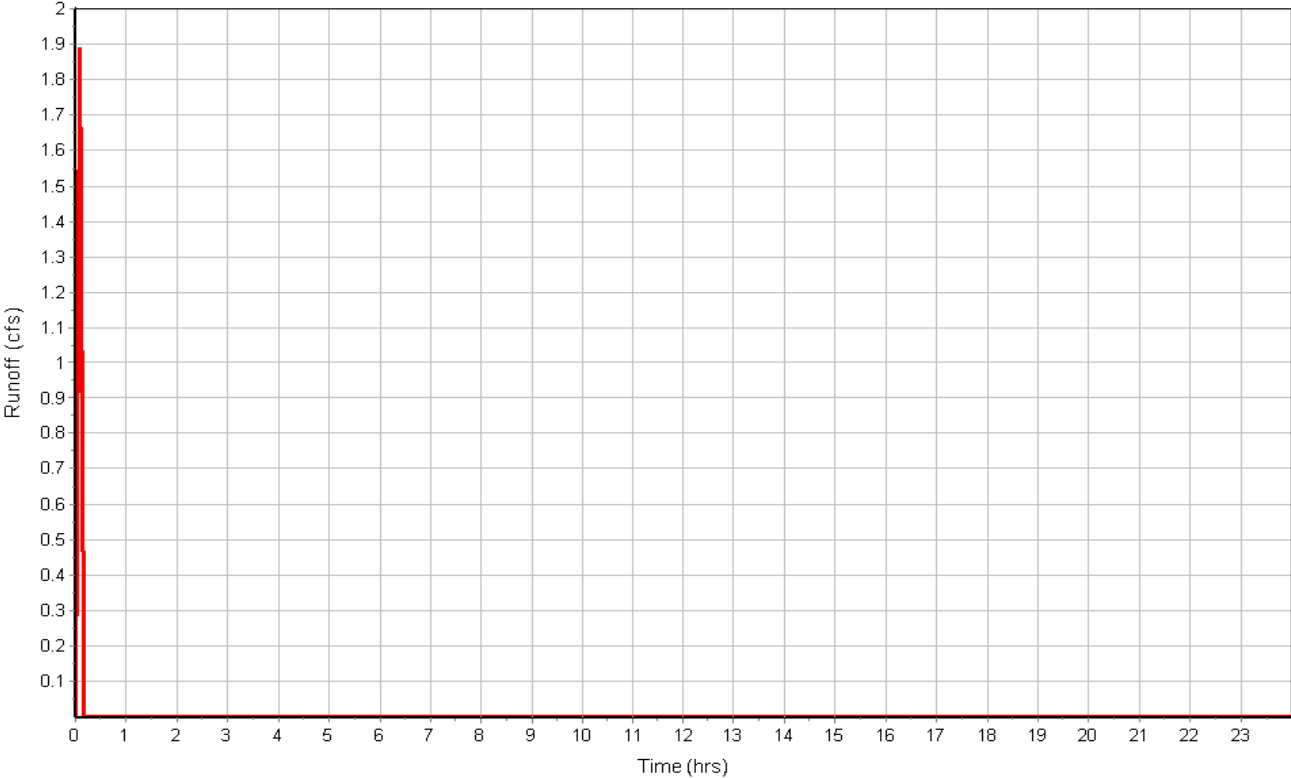
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	400.01	0.00	0.00
Slope (%) :	3.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.80	0.00	0.00
Computed Flow Time (min) :	1.75	0.00	0.00
Total TOC (min)1.75			

Subbasin Runoff Results

Total Rainfall (in) 0.63
Total Runoff (in) 0.57
Peak Runoff (cfs) 1.89
Rainfall Intensity 7.600
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:45

Subbasin : {STORM-BASINS}.17

Runoff Hydrograph



Subbasin : {STORM-BASINS}.18

Input Data

Area (ac) 3.51
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	3.51	-	0.60
Composite Area & Weighted Runoff Coeff.	3.51		0.60

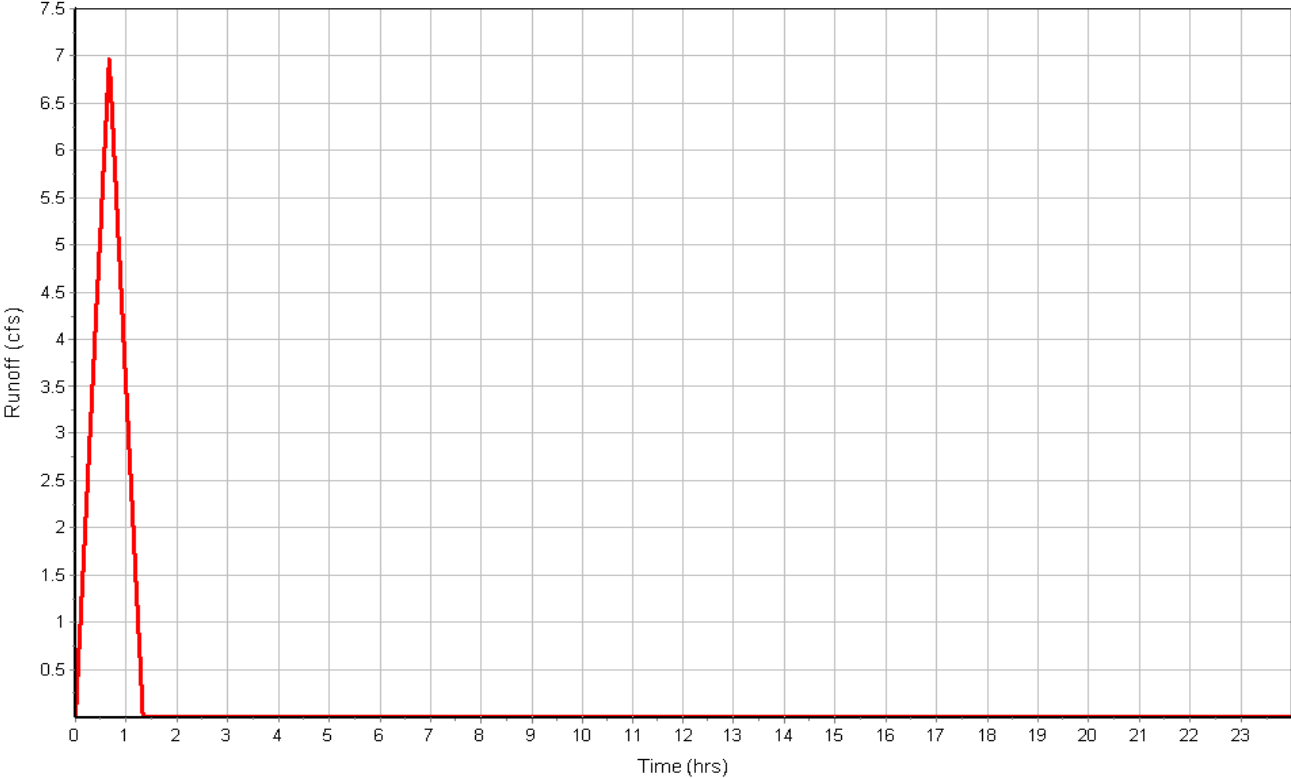
Time of Concentration

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	723.77	0.00	0.00
Slope (%) :	4	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	39.75	0.00	0.00
Total TOC (min)	39.75		

Subbasin Runoff Results

Total Rainfall (in) 2.20
 Total Runoff (in) 1.32
 Peak Runoff (cfs) 6.97
 Rainfall Intensity 3.308
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:39:45

Runoff Hydrograph



Subbasin : {STORM-BASINS}.19

Input Data

Area (ac) 0.05
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.05	-	0.90
Composite Area & Weighted Runoff Coeff.	0.05		0.90

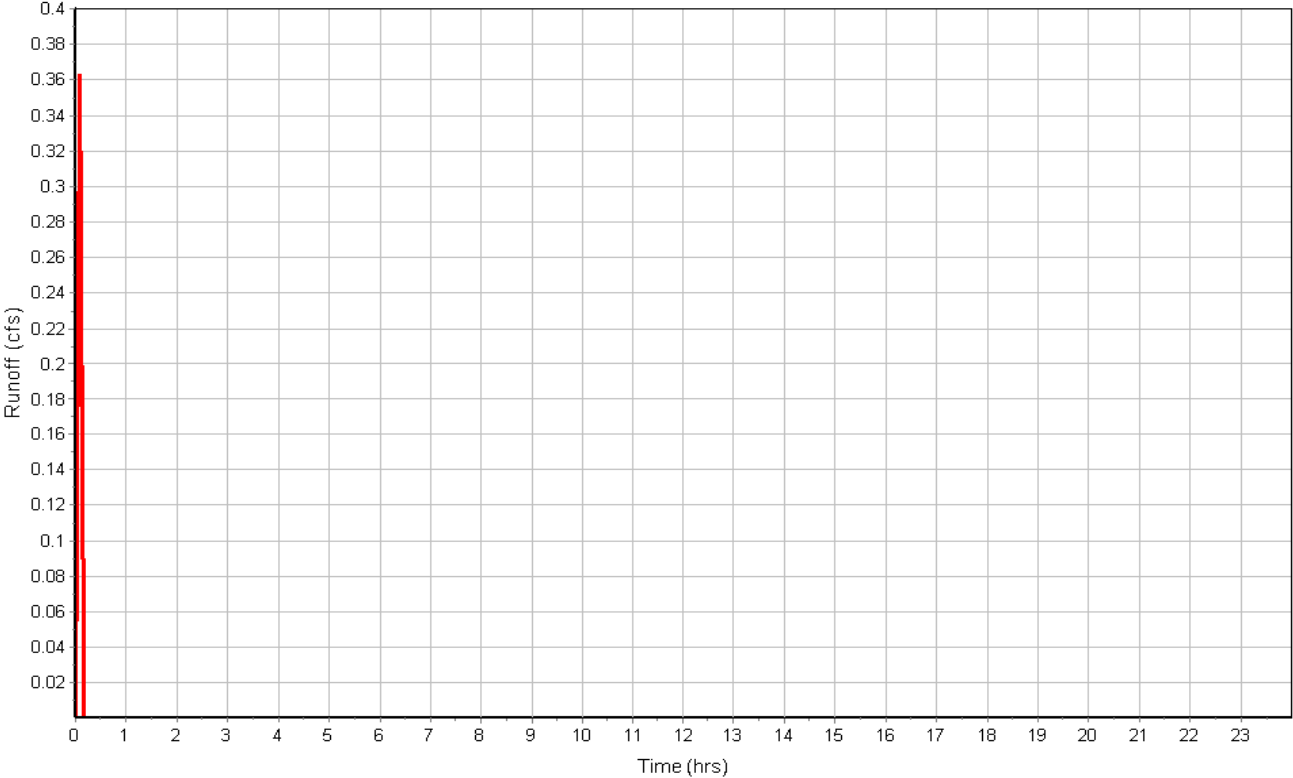
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.63
Total Runoff (in) 0.57
Peak Runoff (cfs) 0.36
Rainfall Intensity 7.600
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.19

Runoff Hydrograph



Subbasin : {STORM-BASINS}.2

Input Data

Area (ac) 0.96
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.86	-	0.60
-	0.10	-	0.90
Composite Area & Weighted Runoff Coeff.	0.96		0.63

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	606.64	0.00	0.00
Slope (%) :	1.8	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	47.50	0.00	0.00

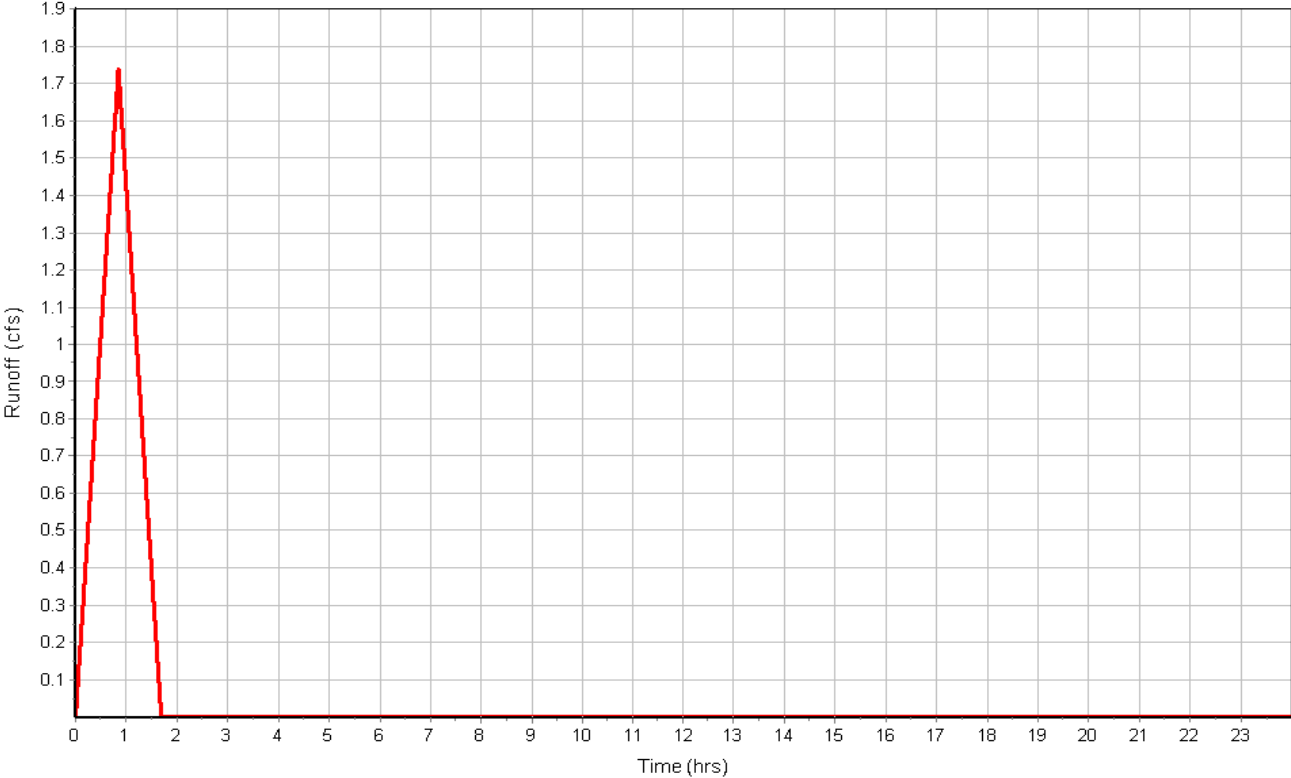
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	533.67	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	3.10	0.00	0.00
Total TOC (min)	50.60		

Subbasin Runoff Results

Total Rainfall (in) 2.43
 Total Runoff (in) 1.53
 Peak Runoff (cfs) 1.74
 Rainfall Intensity 2.873
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:50:36

Subbasin : {STORM-BASINS}.2

Runoff Hydrograph



Subbasin : {STORM-BASINS}.20

Input Data

Area (ac) 0.19
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.19	-	0.90
Composite Area & Weighted Runoff Coeff.	0.19		0.90

Time of Concentration

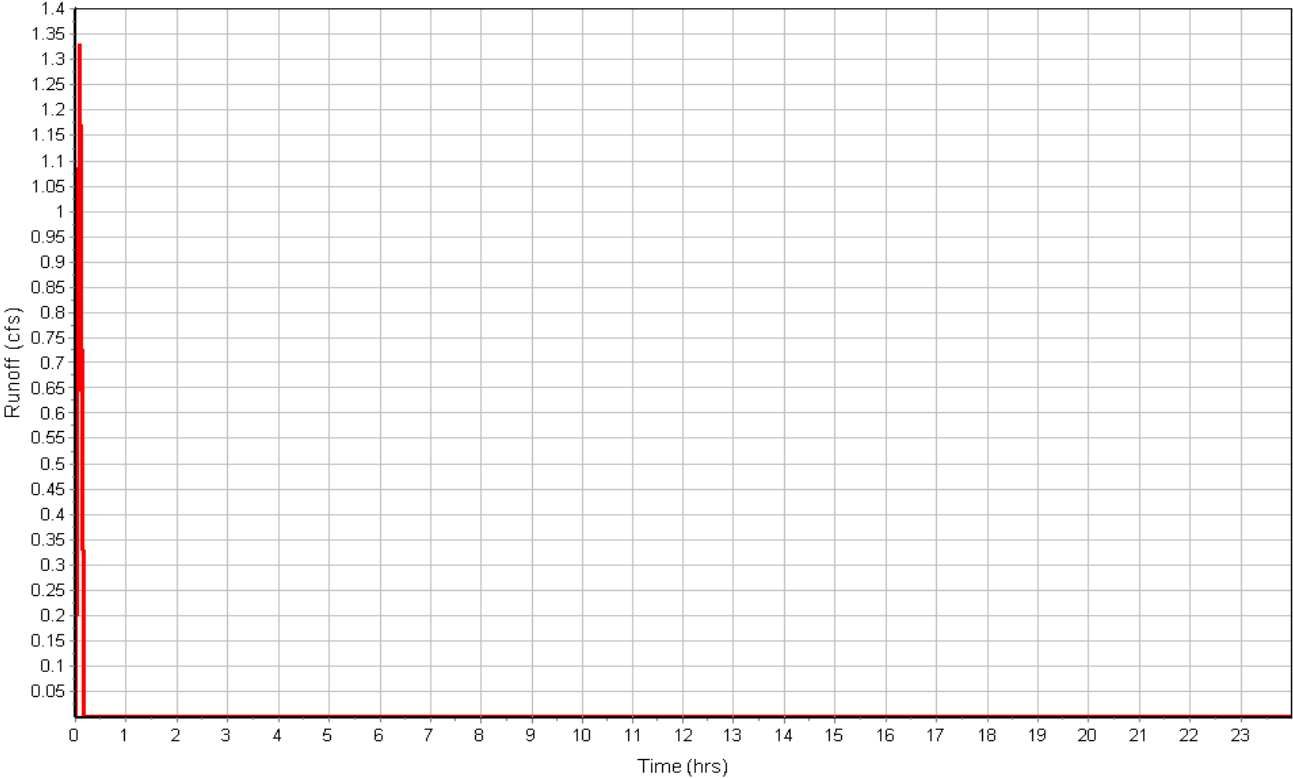
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	319.14	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.85	0.00	0.00
Total TOC (min)1.85			

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 1.33
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:51

Subbasin : {STORM-BASINS}.20

Runoff Hydrograph



Subbasin : {STORM-BASINS}.21

Input Data

Area (ac) 0.22
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.90
Composite Area & Weighted Runoff Coeff.	0.22		0.90

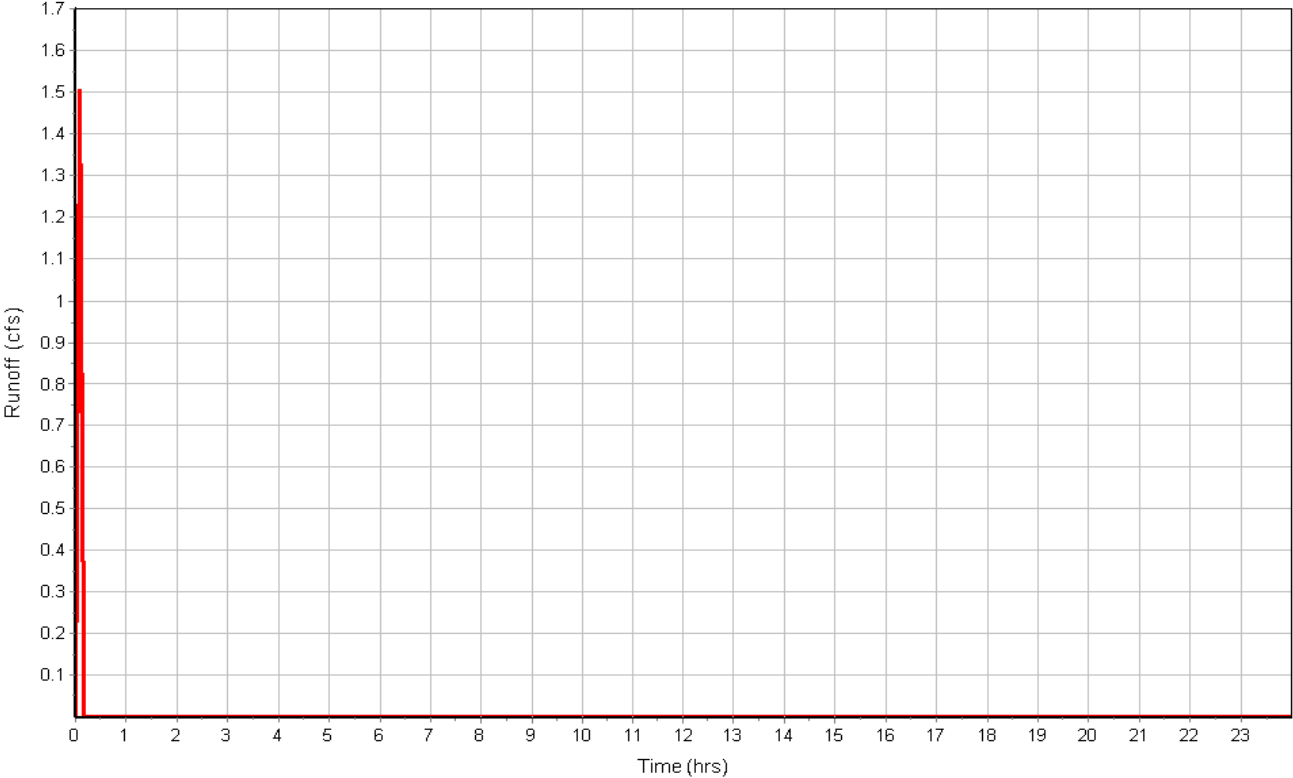
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.63
Total Runoff (in) 0.57
Peak Runoff (cfs) 1.51
Rainfall Intensity 7.600
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.21

Runoff Hydrograph



Subbasin : {STORM-BASINS}.22

Input Data

Area (ac) 0.20
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.20	-	0.90
Composite Area & Weighted Runoff Coeff.	0.20		0.90

Time of Concentration

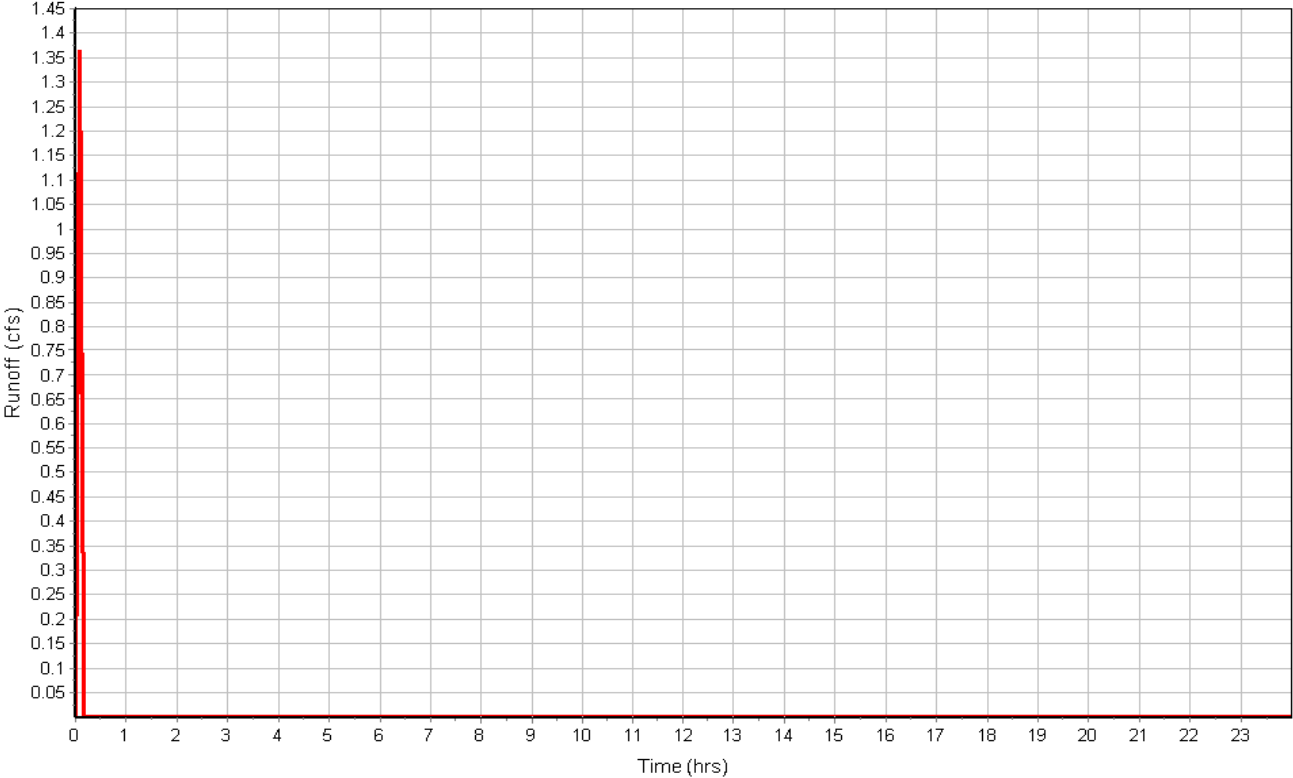
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	364.92	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	1.73	0.00	0.00
Total TOC (min)	1.73		

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 1.36
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:44

Subbasin : {STORM-BASINS}.22

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23A

Input Data

Area (ac) 0.88
Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.88	-	0.60
Composite Area & Weighted Runoff Coeff.	0.88		0.60

Time of Concentration

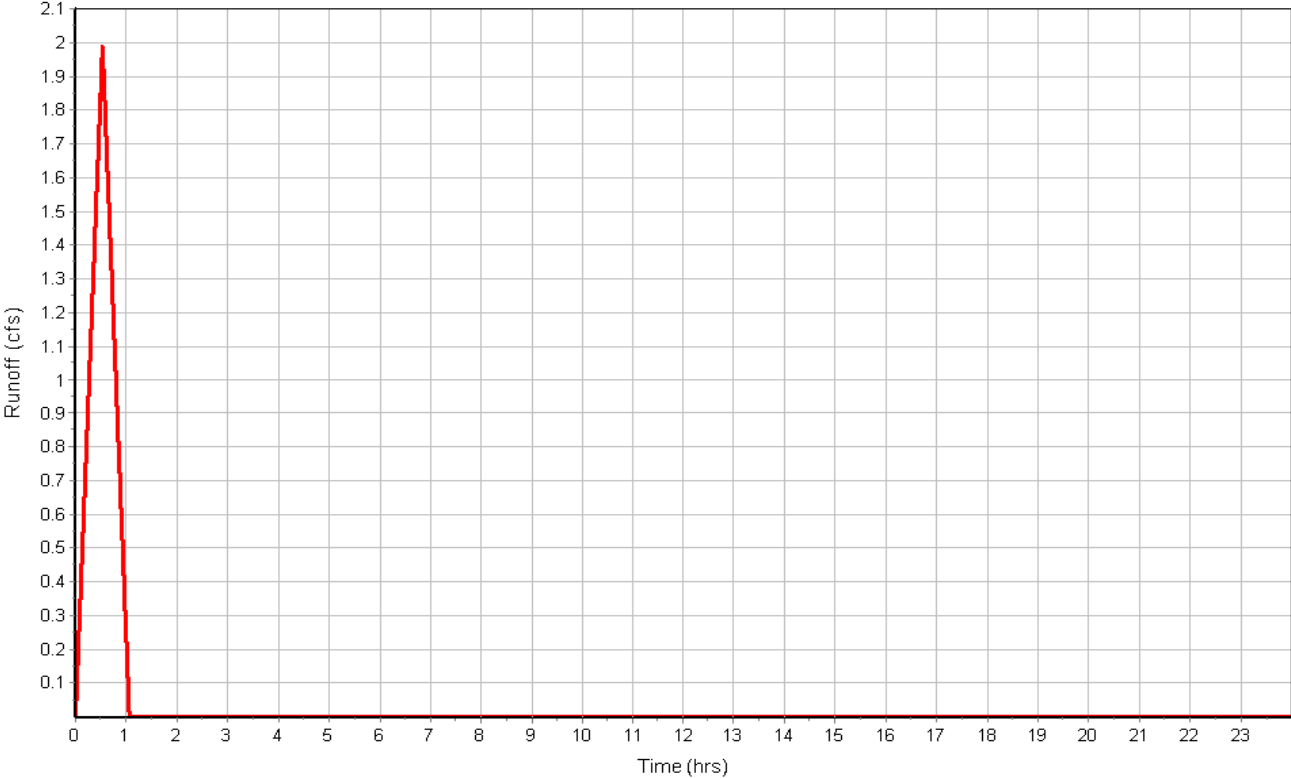
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	476.41	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.25	0.00	0.00
Computed Flow Time (min) :	31.91	0.00	0.00
Total TOC (min)	31.91		

Subbasin Runoff Results

Total Rainfall (in) 2.00
Total Runoff (in) 1.20
Peak Runoff (cfs) 1.99
Rainfall Intensity 3.762
Weighted Runoff Coefficient 0.6000
Time of Concentration (days hh:mm:ss) 0 00:31:55

Subbasin : {STORM-BASINS}.23A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23B

Input Data

Area (ac) 0.21
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.21	-	0.90
Composite Area & Weighted Runoff Coeff.	0.21		0.90

Time of Concentration

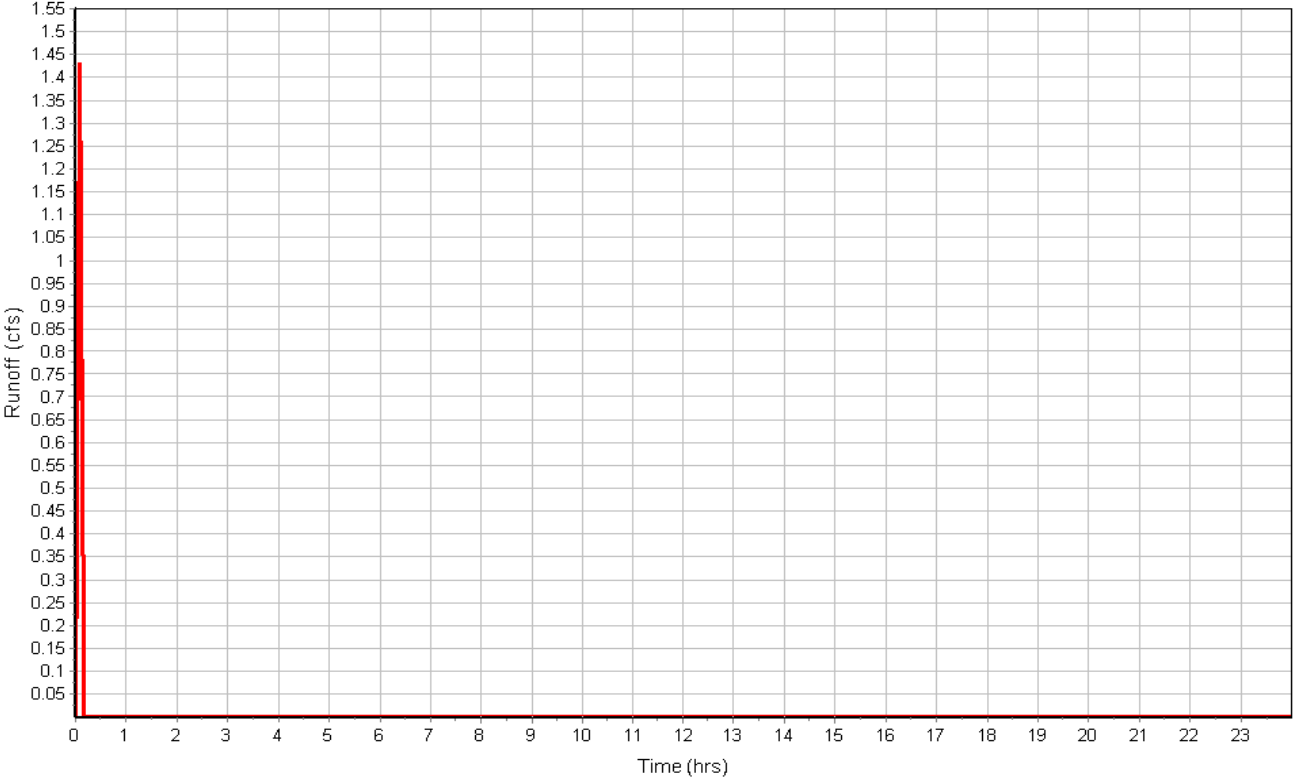
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	294.20	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.71	0.00	0.00
Total TOC (min)	1.71		

Subbasin Runoff Results

Total Rainfall (in) 0.63
Total Runoff (in) 0.57
Peak Runoff (cfs) 1.43
Rainfall Intensity 7.600
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:43

Subbasin : {STORM-BASINS}.23B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.26

Input Data

Area (ac) 1.06
Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.06	-	0.60
Composite Area & Weighted Runoff Coeff.	1.06		0.60

Time of Concentration

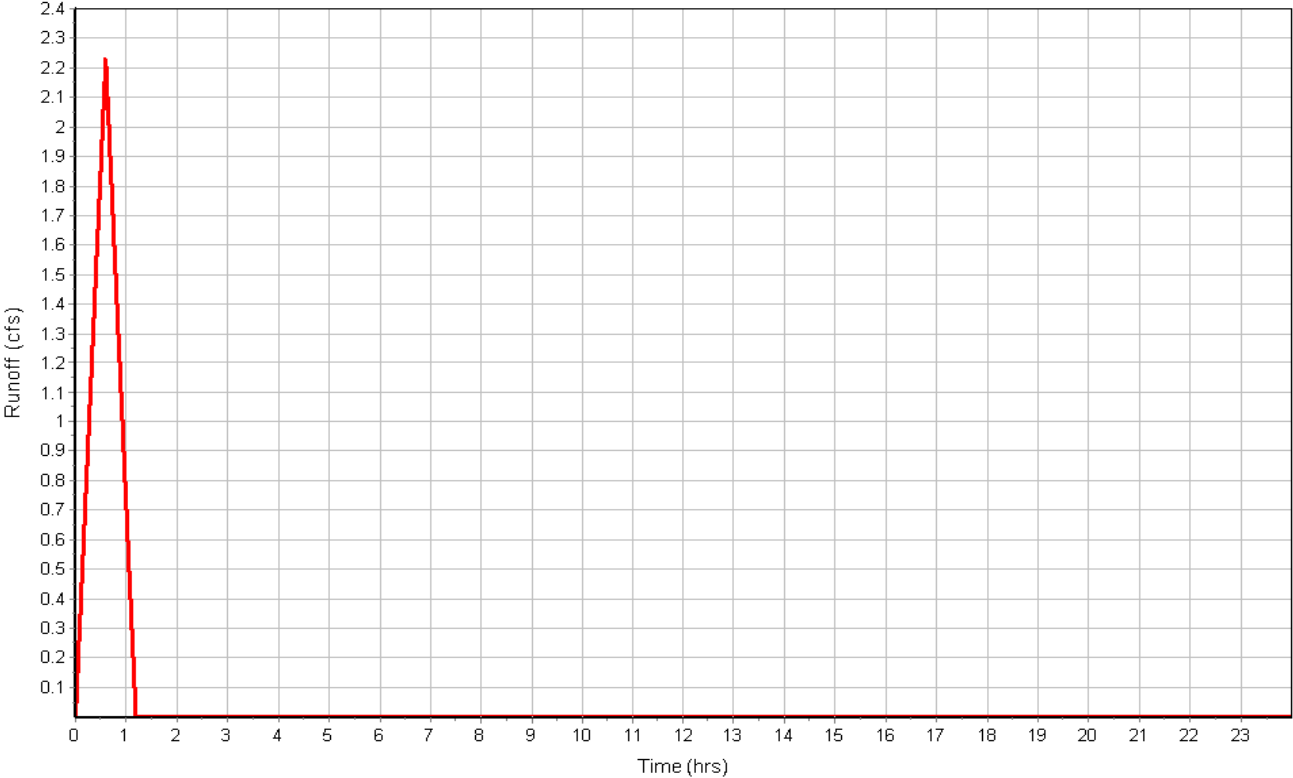
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	361.33	0.00	0.00
Slope (%) :	1.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.17	0.00	0.00
Computed Flow Time (min) :	35.74	0.00	0.00
Total TOC (min)	35.74		

Subbasin Runoff Results

Total Rainfall (in) 2.09
Total Runoff (in) 1.26
Peak Runoff (cfs) 2.23
Rainfall Intensity 3.520
Weighted Runoff Coefficient 0.6000
Time of Concentration (days hh:mm:ss) 0 00:35:44

Subbasin : {STORM-BASINS}.26

Runoff Hydrograph



Subbasin : {STORM-BASINS}.27

Input Data

Area (ac) 0.58
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.72
Composite Area & Weighted Runoff Coeff.	0.58		0.72

Time of Concentration

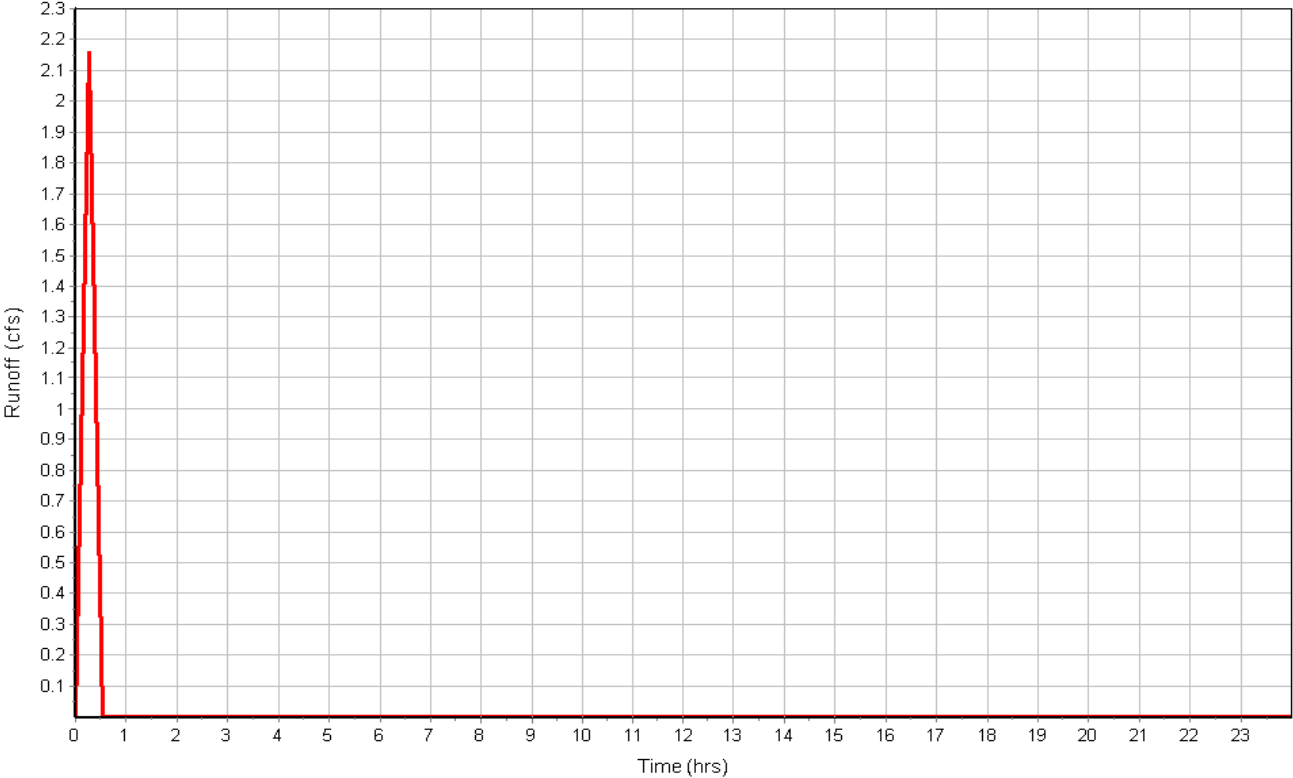
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00
Total TOC (min)	15.94		

Subbasin Runoff Results

Total Rainfall (in) 1.38
Total Runoff (in) 0.99
Peak Runoff (cfs) 2.16
Rainfall Intensity 5.159
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:15:56

Subbasin : {STORM-BASINS}.27

Runoff Hydrograph



Subbasin : {STORM-BASINS}.28

Input Data

Area (ac) 0.22
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.72
Composite Area & Weighted Runoff Coeff.	0.22		0.72

Time of Concentration

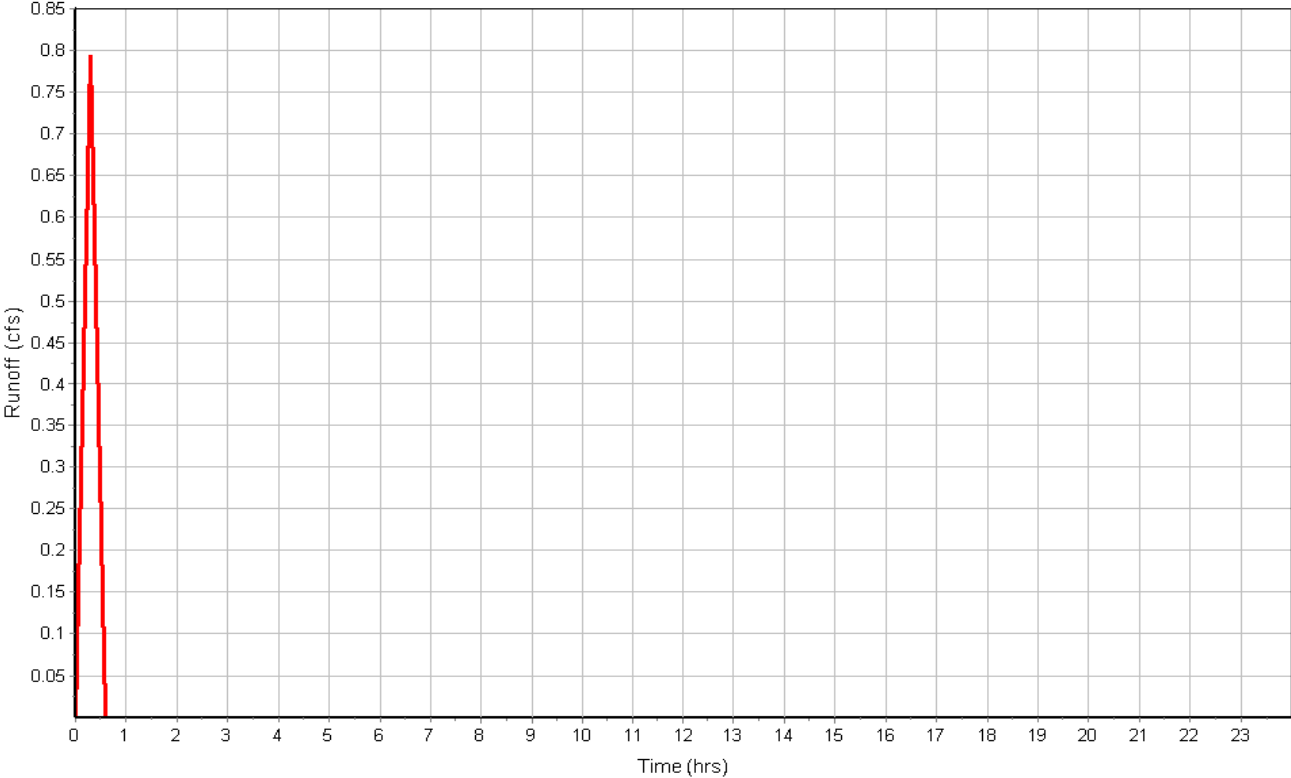
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	185	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.18	0.00	0.00
Computed Flow Time (min) :	17.61	0.00	0.00
Total TOC (min)	17.61		

Subbasin Runoff Results

Total Rainfall (in) 1.45
 Total Runoff (in) 1.05
 Peak Runoff (cfs) 0.79
 Rainfall Intensity 4.937
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:17:37

Subbasin : {STORM-BASINS}.28

Runoff Hydrograph



Subbasin : {STORM-BASINS}.29

Input Data

Area (ac) 0.15
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.15	-	0.90
Composite Area & Weighted Runoff Coeff.	0.15		0.90

Time of Concentration

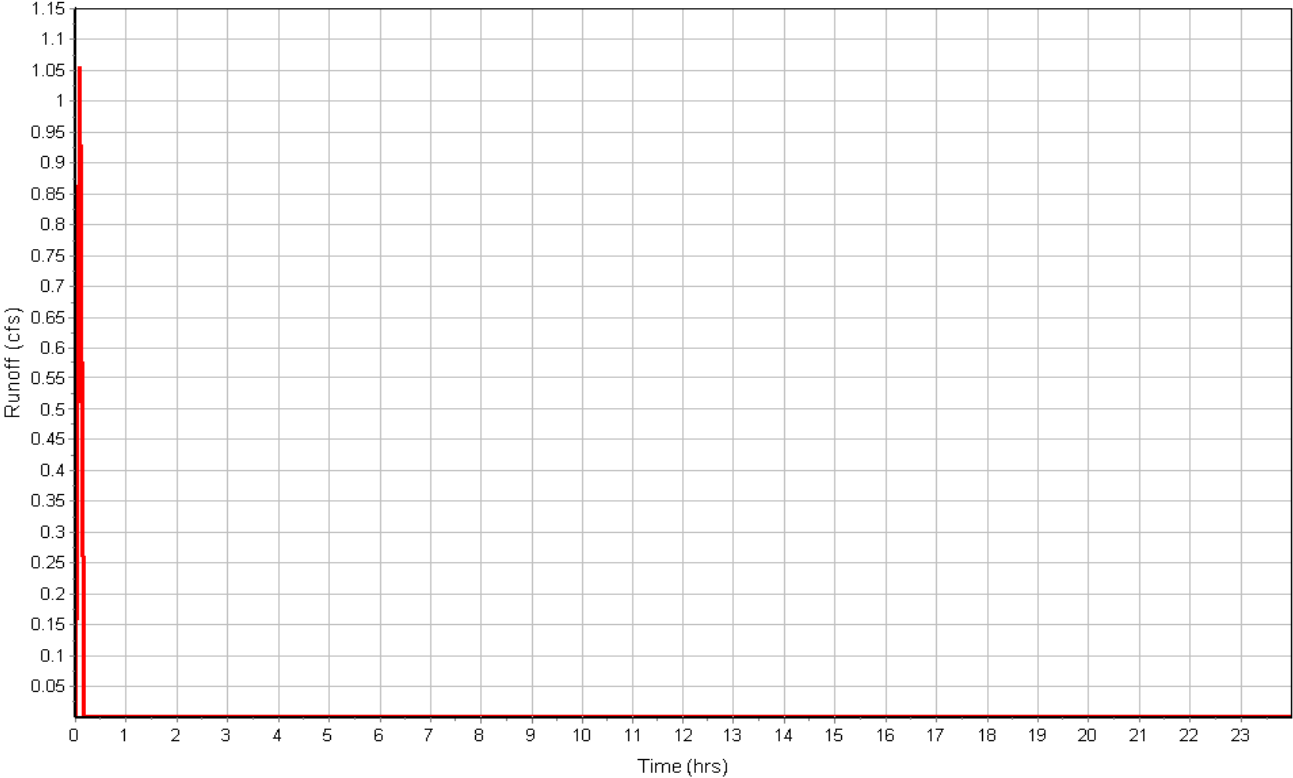
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	223.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.30	0.00	0.00
Total TOC (min)1.30			

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 1.05
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:18

Subbasin : {STORM-BASINS}.29

Runoff Hydrograph



Subbasin : {STORM-BASINS}.3

Input Data

Area (ac) 1.34
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.20	-	0.60
-	0.13	-	0.90
Composite Area & Weighted Runoff Coeff.	1.33		0.63

Time of Concentration

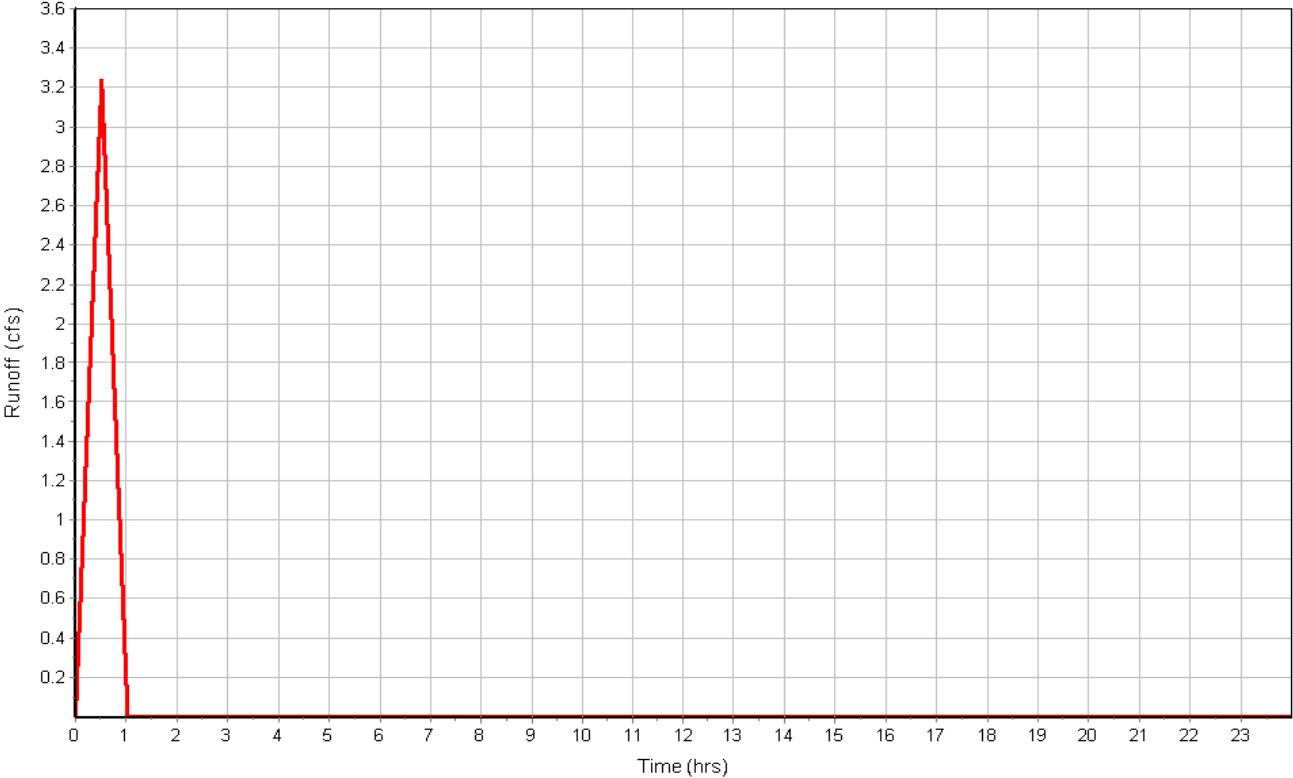
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	545.09	0.00	0.00
Slope (%) :	4.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	30.78	0.00	0.00
Total TOC (min)	30.78		

Subbasin Runoff Results

Total Rainfall (in) 1.97
 Total Runoff (in) 1.24
 Peak Runoff (cfs) 3.24
 Rainfall Intensity 3.842
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:30:47

Subbasin : {STORM-BASINS}.3

Runoff Hydrograph



Subbasin : {STORM-BASINS}.30

Input Data

Area (ac) 0.12
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

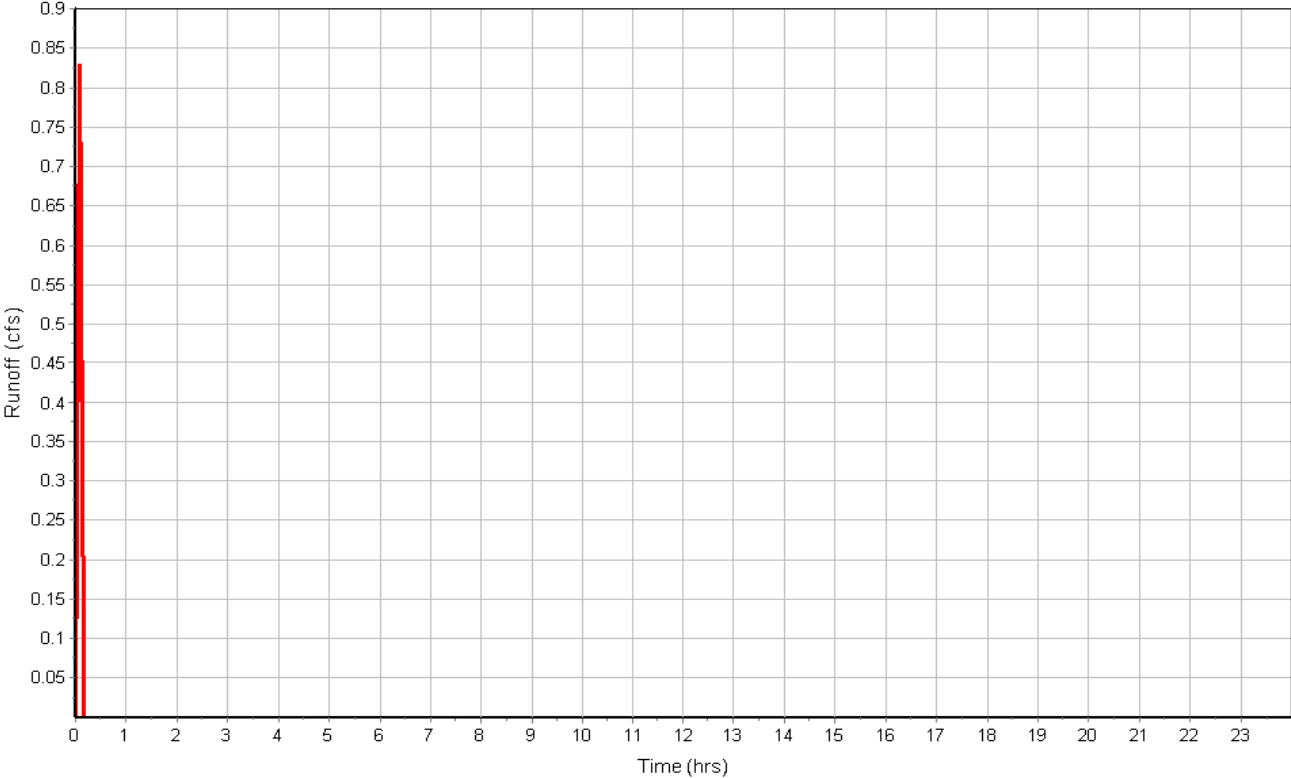
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	222.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.29	0.00	0.00
Total TOC (min)	1.29		

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 0.83
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:17

Subbasin : {STORM-BASINS}.30

Runoff Hydrograph



Subbasin : {STORM-BASINS}.31

Input Data

Area (ac) 0.12
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

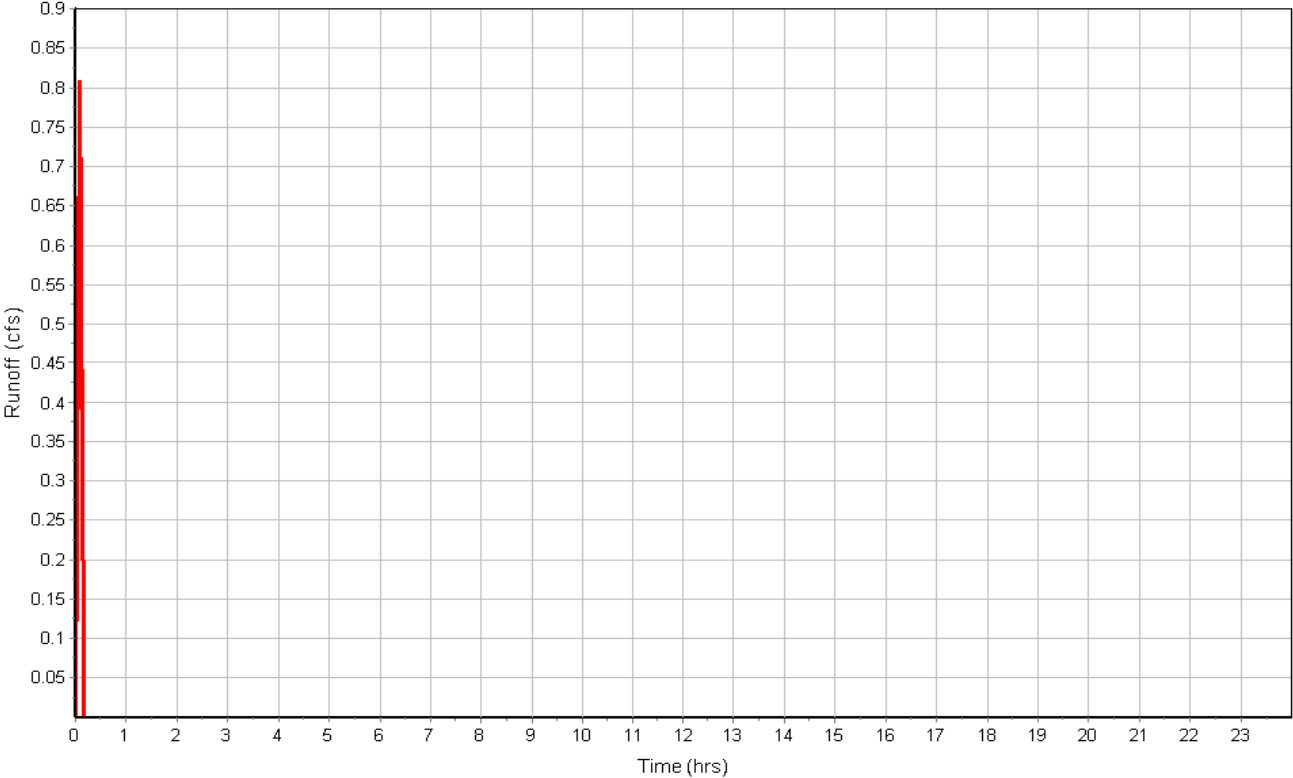
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	258.85	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.50	0.00	0.00
Total TOC (min)	1.50		

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 0.81
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:30

Subbasin : {STORM-BASINS}.31

Runoff Hydrograph



Subbasin : {STORM-BASINS}.4

Input Data

Area (ac) 0.17
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.00	-	0.60
-	0.00	-	0.90
Composite Area & Weighted Runoff Coeff.	0.00		0.75

Time of Concentration

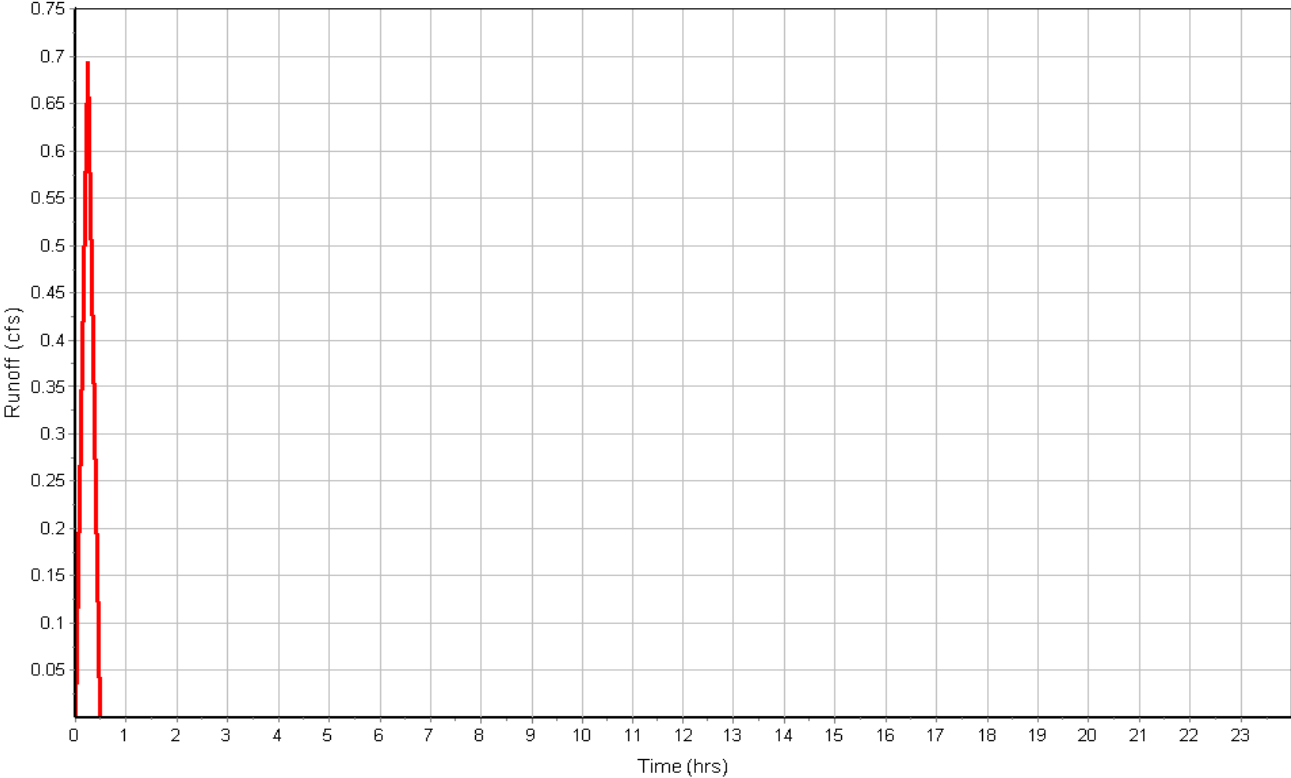
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	211.10	0.00	0.00
Slope (%) :	4.2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.24	0.00	0.00
Computed Flow Time (min) :	14.55	0.00	0.00
Total TOC (min)	14.55		

Subbasin Runoff Results

Total Rainfall (in) 1.30
 Total Runoff (in) 0.97
 Peak Runoff (cfs) 0.69
 Rainfall Intensity 5.369
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:14:33

Subbasin : {STORM-BASINS}.4

Runoff Hydrograph



Subbasin : {STORM-BASINS}.5

Input Data

Area (ac) 0.46
 Weighted Runoff Coefficient 0.6900

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.32	-	0.60
-	0.14	-	0.90
Composite Area & Weighted Runoff Coeff.	0.46		0.69

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	175.47	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	14.35	0.00	0.00

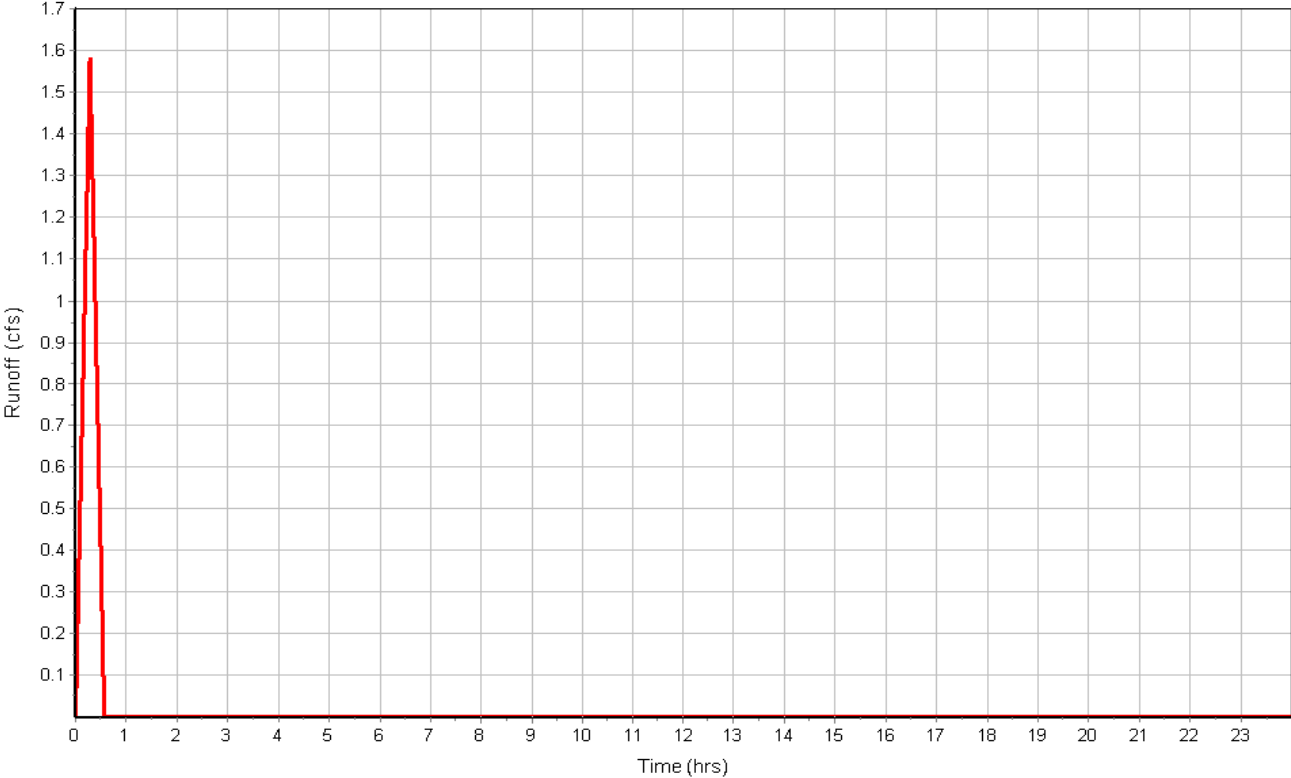
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	576.52	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	2.73	0.00	0.00
Total TOC (min)	17.08		

Subbasin Runoff Results

Total Rainfall (in) 1.42
 Total Runoff (in) 0.98
 Peak Runoff (cfs) 1.58
 Rainfall Intensity 5.004
 Weighted Runoff Coefficient 0.6900
 Time of Concentration (days hh:mm:ss) 0 00:17:05

Subbasin : {STORM-BASINS}.5

Runoff Hydrograph



Subbasin : {STORM-BASINS}.6

Input Data

Area (ac) 1.73
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.73	-	0.60
Composite Area & Weighted Runoff Coeff.	1.73		0.60

Time of Concentration

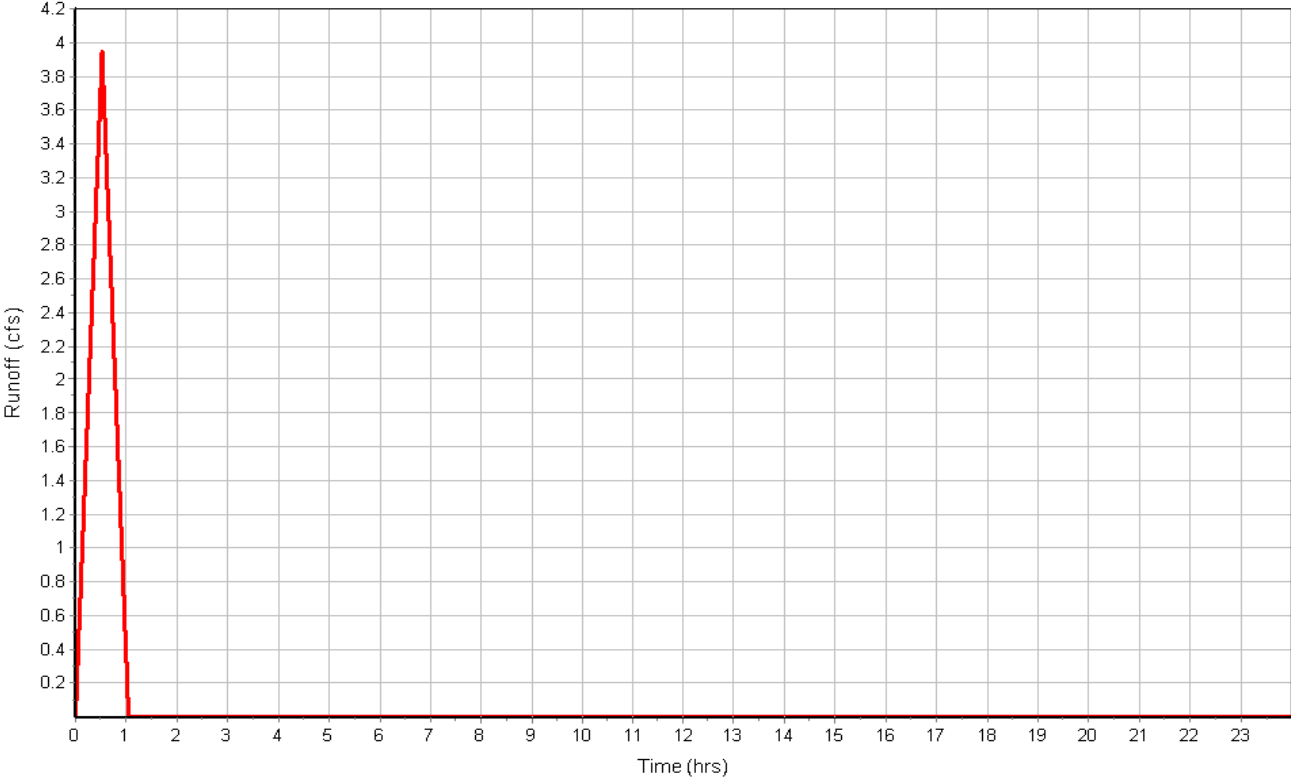
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	501.59	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	31.27	0.00	0.00
Total TOC (min)	31.27		

Subbasin Runoff Results

Total Rainfall (in) 1.99
 Total Runoff (in) 1.19
 Peak Runoff (cfs) 3.94
 Rainfall Intensity 3.807
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:31:16

Subbasin : {STORM-BASINS}.6

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7A

Input Data

Area (ac) 0.38
 Weighted Runoff Coefficient 0.6600

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.30	-	0.60
-	0.08	-	0.90
Composite Area & Weighted Runoff Coeff.	0.38		0.66

Time of Concentration

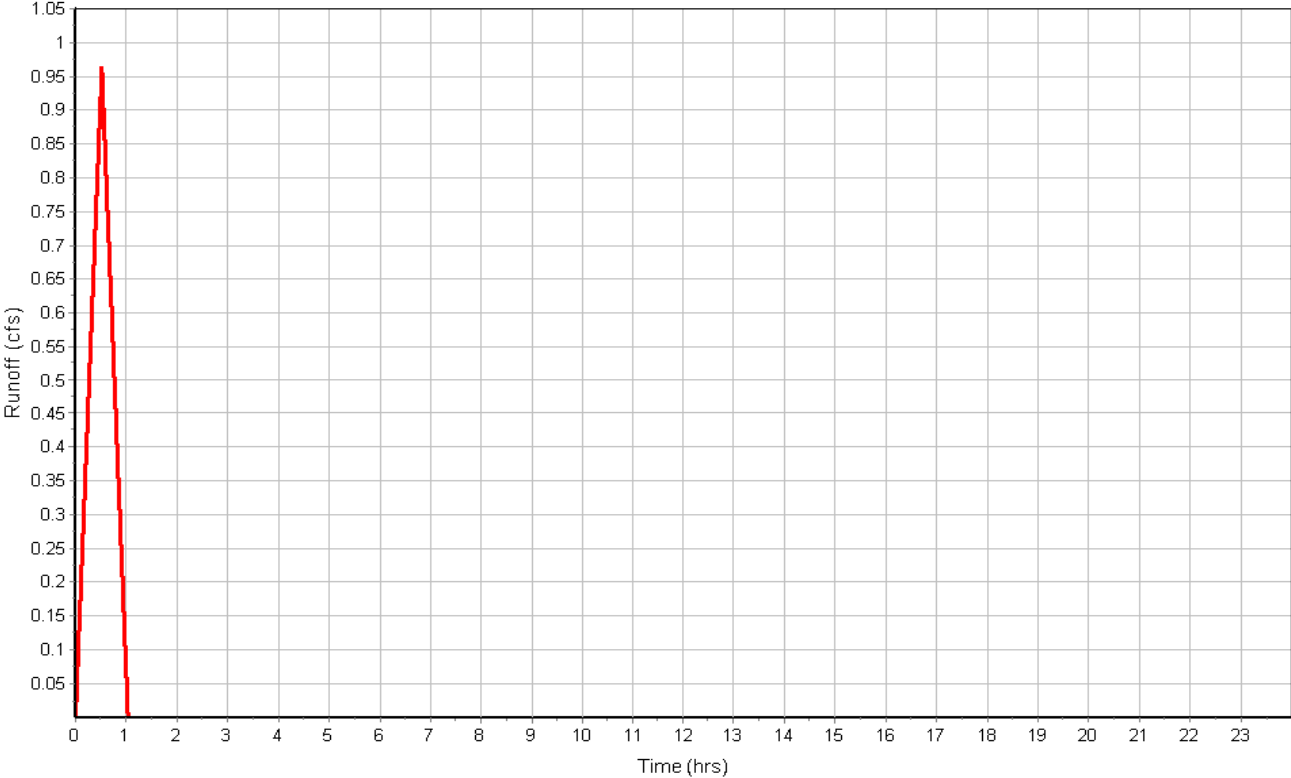
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	419.02	0.00	0.00
Slope (%) :	2.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.23	0.00	0.00
Computed Flow Time (min) :	30.98	0.00	0.00
Total TOC (min)	30.98		

Subbasin Runoff Results

Total Rainfall (in) 1.98
 Total Runoff (in) 1.31
 Peak Runoff (cfs) 0.96
 Rainfall Intensity 3.827
 Weighted Runoff Coefficient 0.6600
 Time of Concentration (days hh:mm:ss) 0 00:30:59

Subbasin : {STORM-BASINS}.7A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7B

Input Data

Area (ac) 0.28
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.17	-	0.60
-	0.11	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.72

Time of Concentration

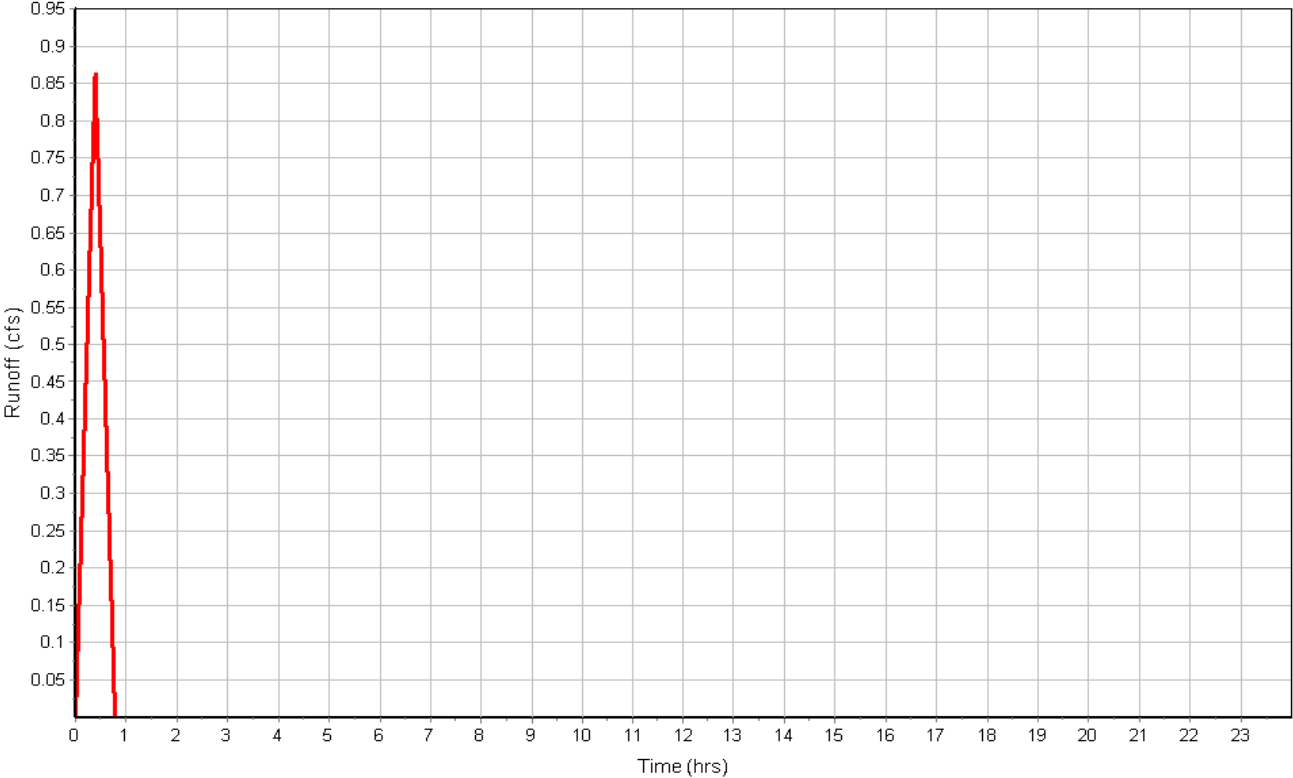
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	282.86	0.00	0.00
Slope (%) :	2.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	23.39	0.00	0.00
Total TOC (min)	23.39		

Subbasin Runoff Results

Total Rainfall (in) 1.69
 Total Runoff (in) 1.22
 Peak Runoff (cfs) 0.86
 Rainfall Intensity 4.354
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:23:23

Subbasin : {STORM-BASINS}.7B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.8

Input Data

Area (ac) 2.66
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	2.66	-	0.60
Composite Area & Weighted Runoff Coeff.	2.66		0.60

Time of Concentration

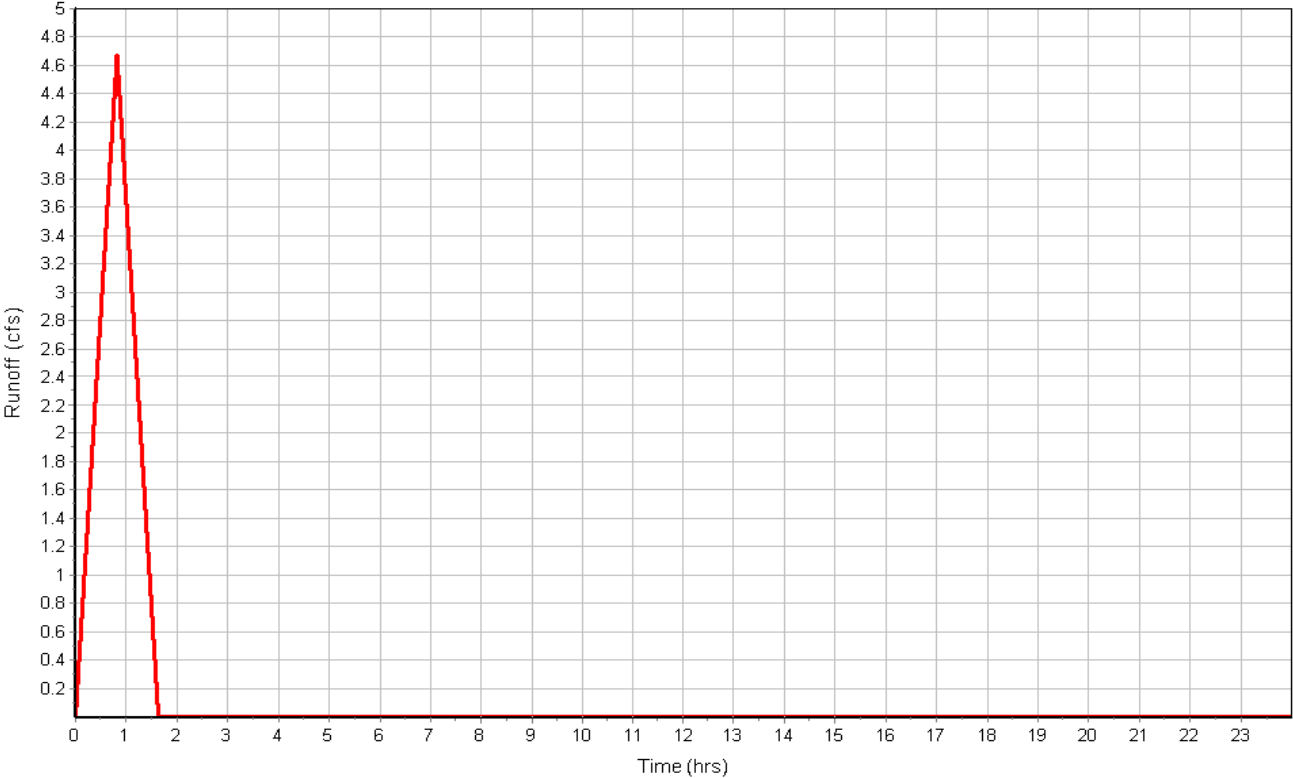
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	801.79	0.00	0.00
Slope (%) :	2.9	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	49.06	0.00	0.00
Total TOC (min)	49.06		

Subbasin Runoff Results

Total Rainfall (in) 2.39
 Total Runoff (in) 1.43
 Peak Runoff (cfs) 4.68
 Rainfall Intensity 2.925
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:49:04

Subbasin : {STORM-BASINS}.8

Runoff Hydrograph



Subbasin : {STORM-BASINS}.9

Input Data

Area (ac) 0.06
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.06	-	0.90
Composite Area & Weighted Runoff Coeff.	0.06		0.90

Time of Concentration

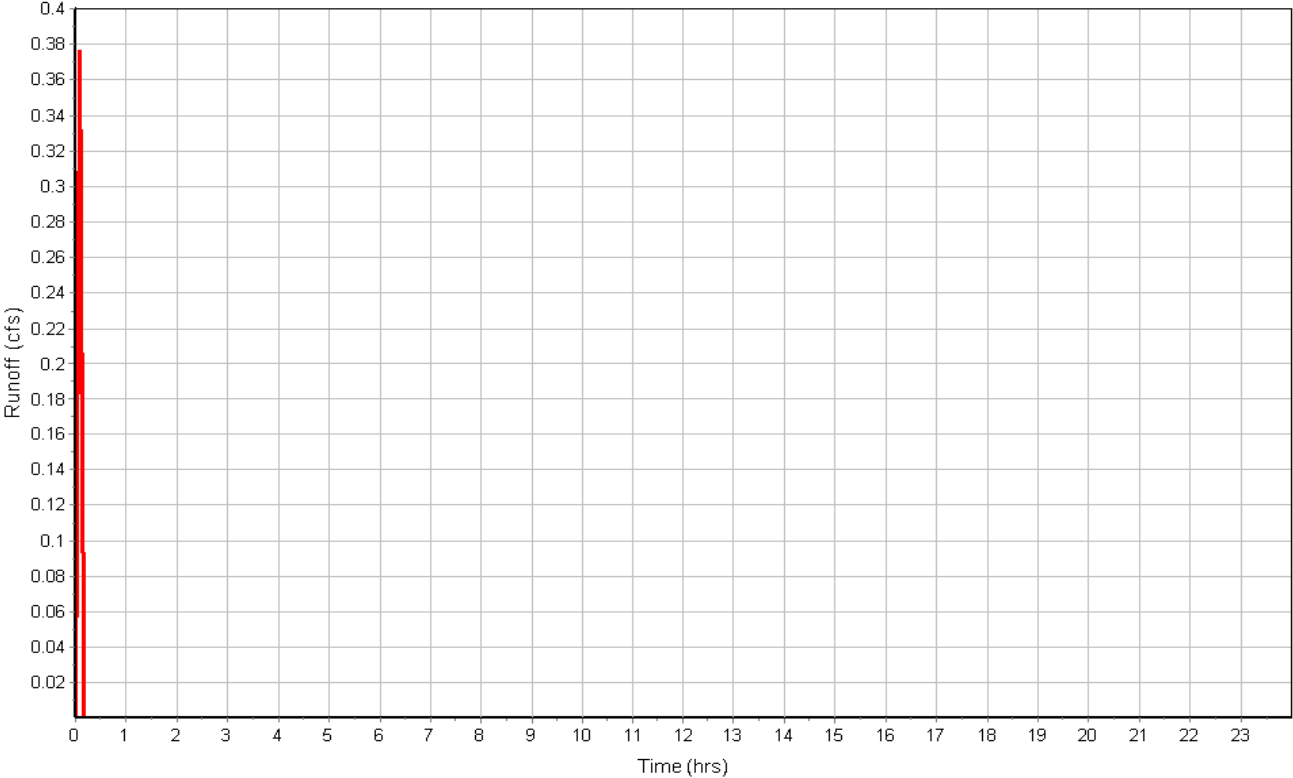
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	93.99	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	0.55	0.00	0.00
Total TOC (min)0.55			

Subbasin Runoff Results

Total Rainfall (in) 0.63
Total Runoff (in) 0.57
Peak Runoff (cfs) 0.38
Rainfall Intensity 7.600
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:33

Subbasin : {STORM-BASINS}.9

Runoff Hydrograph



Junction Input

SN Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft ²)	Minimum Pipe Cover (in)
1 CB-I1	476.43	480.49	4.06	476.43	0.00	480.49	0.00	0.00	0.00
2 CONNECT-G	483.22	485.22	2.00	483.22	0.00	485.22	-0.01	0.00	0.00
3 CONNECT-I	483.38	489.38	6.00	483.38	0.00	489.38	0.00	0.00	0.00
4 FES-H2	482.37	485.12	2.75	482.37	0.00	485.12	0.00	0.00	0.00
5 Jun-01	473.29	477.00	3.71	473.29	0.00	477.00	0.00	0.00	0.00

Junction Results

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 CB-I1	8.21	0.00	477.45	1.02	0.00	3.04	476.47	0.04	0 00:40	0 00:00	0.00	0.00
2 CONNECT-G	6.59	0.00	484.08	0.86	0.00	1.15	483.25	0.03	0 00:31	0 00:00	0.00	0.00
3 CONNECT-I	4.19	0.00	483.89	0.51	0.00	5.50	483.39	0.01	0 00:05	0 00:00	0.00	0.00
4 FES-H2	15.90	0.00	483.31	0.94	0.00	1.81	482.39	0.02	0 00:05	0 00:00	0.00	0.00
5 Jun-01	19.90	0.00	474.79	1.50	0.00	2.21	473.40	0.11	0 00:51	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	Gutter-05	200.35	495.00	4.05	487.00	2.90	8.00	3.9900	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Gutter-06	200.99	495.00	4.37	487.00	3.22	8.00	3.9800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Gutter-07	239.28	487.00	3.22	485.61	3.25	1.39	0.5800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Gutter-08	240.40	485.61	3.25	480.15	3.25	5.46	2.2700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Gutter-09	57.48	480.15	3.25	478.65	3.80	1.50	2.6100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Gutter-10	192.99	480.66	4.57	478.79	3.94	1.87	0.9700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Gutter-12	213.95	483.97	4.97	479.50	2.59	4.47	2.0900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Gutter-13	213.94	491.00	4.00	483.97	4.97	7.03	3.2900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Gutter-14	201.82	500.50	3.77	491.00	4.00	9.50	4.7100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Gutter-15	201.21	500.50	2.90	491.00	3.43	9.50	4.7200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Gutter-16	425.27	491.00	3.43	482.00	3.93	9.00	2.1200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Gutter-17	292.35	485.12	1.74	480.66	4.57	4.46	1.5200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Gutter-23	587.46	487.00	2.90	479.00	4.50	8.00	1.3600	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Gutter-26	57.06	490.37	6.49	485.12	1.74	5.25	9.2000	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 Gutter-05	0.30	0 00:16	9.52	0.03	3.28	1.02	0.14	0.27	0.00		
2 Gutter-06	0.92	0 00:18	9.50	0.10	3.75	0.89	0.21	0.41	0.00		
3 Gutter-07	0.64	0 00:33	3.83	0.17	1.71	2.33	0.25	0.50	0.00		
4 Gutter-08	0.00	0 00:33	7.18	0.00	0.00		0.00	0.00	0.00		
5 Gutter-09	0.00	0 00:00	7.33	0.00	0.00		0.00	0.00	0.00		
6 Gutter-10	0.12	0 00:08	4.69	0.03	2.27	1.42	0.12	0.23	0.00		
7 Gutter-12	0.02	0 00:30	6.51	0.00	1.36	2.62	0.05	0.10	0.00		
8 Gutter-13	0.00	0 00:00	9.03	0.00	0.00		0.00	0.00	0.00		
9 Gutter-14	0.08	0 00:07	10.29	0.01	3.62	0.93	0.07	0.15	0.00		
10 Gutter-15	0.24	0 00:06	10.48	0.02	4.35	0.77	0.11	0.23	0.00		
11 Gutter-16	0.00	0 00:00	7.04	0.00	0.00		0.00	0.00	0.00		
12 Gutter-17	0.09	0 00:20	5.88	0.01	1.87	2.61	0.09	0.18	0.00		
13 Gutter-23	0.21	0 00:38	5.55	0.04	2.35	4.17	0.14	0.27	0.00		
14 Gutter-26	0.67	0 00:16	14.45	0.05	3.32	0.29	0.16	0.31	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	ST-C1	92.51	483.78	0.00	483.22	0.00	0.56	0.6000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
2	ST-C2	200.00	490.63	0.00	483.88	0.10	6.75	3.3800	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	ST-C3	32.02	490.95	0.00	490.63	0.00	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	ST-CS1	24.64	473.29	0.00	473.16	0.00	0.13	0.5300	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5	ST-D1	32.02	484.10	0.00	483.88	0.10	0.22	0.6900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6	ST-E1 (2)	133.90	487.00	0.00	483.38	0.00	3.62	2.7000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
7	ST-E2 (EXIST)	200.00	496.73	0.00	487.10	0.10	9.63	4.8100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8	ST-E3 (EXIST)	32.02	497.60	0.00	496.83	0.10	0.77	2.4000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9	ST-F1 (EXIST)	32.02	487.57	0.00	487.10	0.10	0.47	1.4600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10	ST-G1	72.10	474.50	0.00	473.92	0.63	0.58	0.8000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11	ST-G2	31.99	474.85	0.00	474.50	0.00	0.35	1.0900	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12	ST-G3	49.09	476.90	0.00	474.95	0.10	1.95	3.9700	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13	ST-G4	238.61	482.36	0.00	476.90	0.00	5.46	2.2900	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14	ST-G5	145.74	483.22	0.00	482.35	-0.01	0.88	0.6000	CIRCULAR	24.000	24.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
15	ST-H1	190.63	476.09	0.00	474.95	0.10	1.14	0.6000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
16	ST-H2	252.90	482.37	0.00	476.19	0.10	6.18	2.4400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17	ST-H2A	37.10	483.38	0.00	482.37	0.00	1.01	2.7200	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18	ST-H3	48.08	483.88	0.00	483.38	0.00	0.50	1.0400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19	ST-H5	378.49	485.87	0.00	483.98	0.10	1.89	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20	ST-H6	32.00	488.21	0.00	487.89	2.02	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21	ST-I1	48.08	476.43	0.00	476.19	0.10	0.24	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22	ST-I2	95.00	476.91	0.00	476.43	0.00	0.48	0.5100	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23	ST-I3	212.56	479.00	0.00	477.00	0.09	2.00	0.9400	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24	ST-I4	78.66	483.38	0.00	481.27	2.27	2.11	2.6900	CIRCULAR	18.000	18.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
25	ST-K1	32.05	477.32	-0.75	477.00	0.09	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 ST-C1	6.59	0 00:31	17.52	0.38	5.18	0.30	0.85	0.42	0.00		Calculated
2 ST-C2	0.95	0 00:17	19.30	0.05	6.85	0.49	0.23	0.15	0.00		Calculated
3 ST-C3	0.37	0 00:14	10.50	0.03	2.79	0.19	0.19	0.13	0.00		Calculated
4 ST-CS1	19.90	0 00:51	29.79	0.67	6.50	0.06	1.50	0.60	0.00		Calculated
5 ST-D1	2.95	0 00:31	8.71	0.34	4.45	0.12	0.60	0.40	0.00		Calculated
6 ST-E1 (2)	4.19	0 00:05	17.26	0.24	8.08	0.28	0.50	0.34	0.00		Calculated
7 ST-E2 (EXIST)	2.20	0 00:05	23.05	0.10	8.30	0.40	0.31	0.21	0.00		Calculated
8 ST-E3 (EXIST)	1.23	0 00:05	16.27	0.08	6.26	0.09	0.28	0.19	0.00		Calculated
9 ST-F1 (EXIST)	1.24	0 00:05	12.70	0.10	4.57	0.12	0.32	0.21	0.00		Calculated
10 ST-G1	29.16	0 00:06	36.79	0.79	8.33	0.14	1.68	0.67	0.00		Calculated
11 ST-G2	27.15	0 00:06	42.90	0.63	9.24	0.06	1.44	0.58	0.00		Calculated
12 ST-G3	8.63	0 00:32	45.08	0.19	11.06	0.07	0.59	0.30	0.00		Calculated
13 ST-G4	8.08	0 00:32	34.22	0.24	8.92	0.45	0.66	0.33	0.00		Calculated
14 ST-G5	6.59	0 00:31	17.44	0.38	5.17	0.47	0.85	0.43	0.00		Calculated
15 ST-H1	24.30	0 00:06	31.72	0.77	7.21	0.44	1.64	0.65	0.00		Calculated
16 ST-H2	15.78	0 00:06	35.36	0.45	11.02	0.38	0.93	0.47	0.00		Calculated
17 ST-H2A	15.90	0 00:05	37.32	0.43	11.41	0.05	0.91	0.46	0.00		Calculated
18 ST-H3	15.00	0 00:05	23.11	0.65	7.83	0.10	1.17	0.59	0.00		Calculated
19 ST-H5	13.57	0 00:05	16.01	0.85	6.03	1.05	1.40	0.70	0.00		Calculated
20 ST-H6	3.98	0 00:35	10.50	0.38	5.53	0.10	0.64	0.43	0.00		Calculated
21 ST-I1	8.21	0 00:40	16.00	0.51	5.13	0.16	1.02	0.51	0.00		Calculated
22 ST-I2	8.21	0 00:40	16.08	0.51	5.15	0.31	1.01	0.51	0.00		Calculated
23 ST-I3	4.58	0 00:06	10.19	0.45	5.69	0.62	0.70	0.47	0.00		Calculated
24 ST-I4	4.19	0 00:05	17.22	0.24	8.05	0.16	0.50	0.34	0.00		Calculated
25 ST-K1	6.97	0 00:40	19.20	0.36	9.99	0.05	0.63	0.42	0.00		Calculated

Inlet Input

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft ²)	Grate Clogging Factor (%)	
1 CB-C1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.78	487.16	3.38	483.78	0.00	N/A	0.00
2 CB-C2 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	490.63	495.14	4.51	490.63	0.00	N/A	0.00
3 CB-C3 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	490.95	495.16	4.21	490.95	0.00	N/A	0.00
4 CB-D1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	484.10	487.17	3.07	484.10	0.00	N/A	0.00
5 CB-E1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	487.00	491.64	4.64	487.00	0.00	N/A	0.00
6 CB-E2 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	496.73	501.05	4.32	496.73	0.00	N/A	0.00
7 CB-E3 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	497.60	501.00	3.41	497.60	0.00	N/A	0.00
8 CB-F1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	487.57	491.28	3.71	487.57	0.00	N/A	0.00
9 CB-G2	FHWA HEC-22	GENERIC	N/A	On Sag	1	474.50	479.18	4.68	474.50	0.00	0.00	0.00
10 CB-G3	FHWA HEC-22	GENERIC	N/A	On Sag	1	474.85	478.79	3.94	474.85	0.00	0.00	0.00
11 CB-G4	FHWA HEC-22	GENERIC	N/A	On Grade	1	476.90	480.15	3.25	476.90	0.00	N/A	0.00
12 CB-G5	FHWA HEC-22	GENERIC	N/A	On Grade	1	482.36	485.61	3.25	482.36	0.00	N/A	0.00
13 CB-H1	FHWA HEC-22	GENERIC	N/A	On Grade	1	476.09	480.66	4.57	476.09	0.00	N/A	0.00
14 CB-H2	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.38	485.12	1.74	483.38	0.00	N/A	0.00
15 CB-H3	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.88	490.37	6.49	483.88	0.00	N/A	0.00
16 CB-H5	FHWA HEC-22	GENERIC	N/A	On Sag	1	485.87	488.55	2.68	485.87	0.00	0.00	0.00
17 CB-H6	FHWA HEC-22	GENERIC	N/A	On Sag	1	488.21	488.55	0.35	488.21	0.00	0.00	0.00
18 CB-I2	FHWA HEC-22	GENERIC	N/A	On Sag	1	476.91	479.97	3.06	476.91	0.00	0.00	0.00
19 CB-I3	FHWA HEC-22	GENERIC	N/A	On Grade	1	479.00	483.97	4.97	479.00	0.00	N/A	0.00
20 CB-K1	FHWA HEC-22	GENERIC	N/A	On Sag	1	478.07	482.00	3.93	478.07	0.00	0.00	0.00

Roadway & Gutter Input

SN Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1 CB-C1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
2 CB-C2 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
3 CB-C3 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
4 CB-D1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
5 CB-E1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
6 CB-E2 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
7 CB-E3 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
8 CB-F1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
9 CB-G2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
10 CB-G3	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
11 CB-G4	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
12 CB-G5	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
13 CB-H1	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
14 CB-H2	0.0100	0.0200	0.0160	0.0620	1.50	0.1969	12.00
15 CB-H3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
16 CB-H5	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
17 CB-H6	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
18 CB-I2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
19 CB-I3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
20 CB-K1	N/A	0.0200	0.0130	0.0833	1.50	0.1969	12.00

Inlet Results

SN Element ID	Peak Flow	Peak Lateral Inflow	Peak Flow Intercepted by Inlet	Peak Flow Bypassing Inlet	Inlet Efficiency during Peak	Max Gutter Spread during Peak	Max Gutter Water Elev. during Peak	Max Gutter Water Depth during Peak	Time of Max Depth Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)
1 CB-C1 (EXIST)	4.14	3.94	3.45	0.69	83.41	9.58	487.41	0.25	0 00:31	0.00	0.00
2 CB-C2 (EXIST)	1.58	1.58	0.62	0.95	39.58	3.73	495.35	0.21	0 00:17	0.00	0.00
3 CB-C3 (EXIST)	0.69	0.69	0.37	0.33	52.99	2.60	495.31	0.15	0 00:14	0.00	0.00
4 CB-D1 (EXIST)	3.26	3.24	2.95	0.31	90.54	8.69	487.40	0.24	0 00:31	0.00	0.00
5 CB-E1 (EXIST)	0.79	0.79	0.79	0.00	100.00	4.49	491.79	0.15	0 00:05	0.00	0.00
6 CB-E2 (EXIST)	1.12	1.12	0.99	0.13	88.23	5.43	501.22	0.17	0 00:05	0.00	0.00
7 CB-E3 (EXIST)	1.57	1.57	1.23	0.34	78.39	6.35	501.19	0.19	0 00:05	0.00	0.00
8 CB-F1 (EXIST)	1.24	1.18	1.24	0.00	100.00	5.67	491.45	0.18	0 00:05	0.00	0.00
9 CB-G2	2.86	2.86	N/A	N/A	N/A	9.21	479.93	0.75	0 00:06	0.00	0.00
10 CB-G3	4.68	4.68	N/A	N/A	N/A	12.80	479.61	0.82	0 00:06	0.00	0.00
11 CB-G4	0.86	0.86	0.86	0.00	100.00	4.72	480.31	0.16	0 00:32	0.00	0.00
12 CB-G5	1.53	0.96	1.53	0.00	100.00	6.29	485.80	0.19	0 00:31	0.00	0.00
13 CB-H1	1.33	1.33	1.10	0.22	83.25	5.86	480.84	0.18	0 00:06	0.00	0.00
14 CB-H2	1.41	0.79	1.30	0.11	92.29	7.68	485.33	0.22	0 00:05	0.00	0.00
15 CB-H3	2.18	2.18	1.48	0.70	68.01	7.32	490.58	0.21	0 00:05	0.00	0.00
16 CB-H5	11.06	11.06	N/A	N/A	N/A	22.75	489.57	1.02	0 00:35	0.00	0.00
17 CB-H6	3.98	3.98	N/A	N/A	N/A	11.51	489.34	0.79	0 00:01	0.00	0.00
18 CB-I2	0.38	0.38	N/A	N/A	N/A	1.72	480.21	0.24	0 00:40	0.00	0.00
19 CB-I3	2.24	2.24	2.20	0.03	98.55	7.40	484.18	0.21	0 00:05	0.00	0.00
20 CB-K1	6.97	6.97	N/A	N/A	N/A	16.72	482.93	0.93	0 00:40	0.00	0.00

Storage Nodes

Storage Node : POND1

Input Data

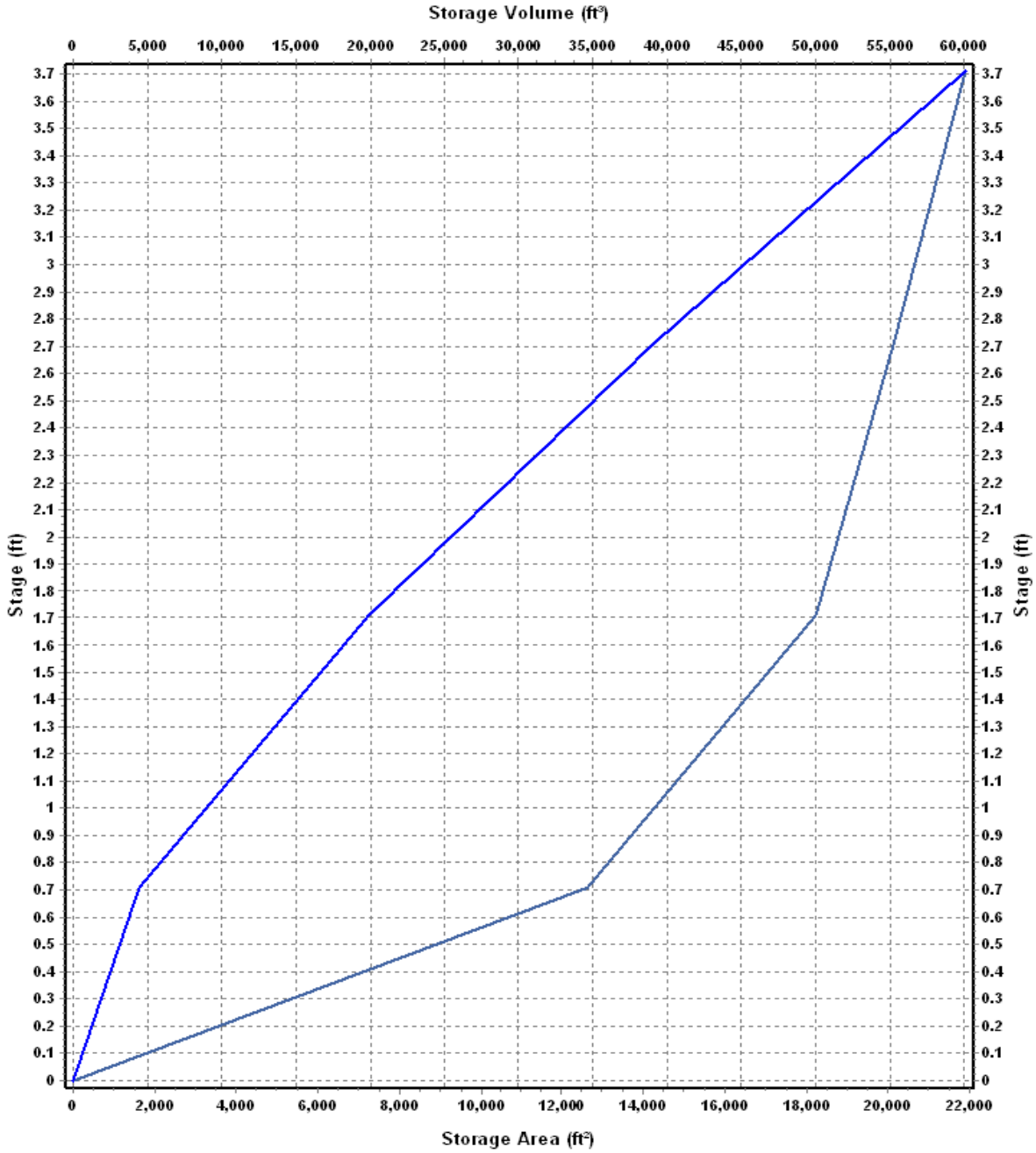
Invert Elevation (ft)	473.29
Max (Rim) Elevation (ft)	477.00
Max (Rim) Offset (ft)	3.71
Initial Water Elevation (ft)	473.29
Initial Water Depth (ft)	0.00
Ponded Area (ft ²)	0.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : POND1

Stage (ft)	Storage Area (ft ²)	Storage Volume (ft ³)
0	0	0.000
0.71	12615	4478.33
1.71	18216	19893.83
2.71	20116	39059.83
3.71	21896	60065.83

Storage Area Volume Curves



— Storage Area — Storage Volume

Storage Node : POND1 (continued)

Outflow Weirs

SN Element ID	Weir Type	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1 Weir-02	Rectangular	No	476.00	2.71	15.00	1.00	3.33

Outflow Orifices

SN Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1 Orifice-01	Side	Rectangular	No		26.50	21.00	0.00	0.63

Output Summary Results

Peak Inflow (cfs)	29.48
Peak Lateral Inflow (cfs)	3.38
Peak Outflow (cfs)	19.90
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	475.46
Max HGL Depth Attained (ft)	2.17
Average HGL Elevation Attained (ft)	473.43
Average HGL Depth Attained (ft)	0.14
Time of Max HGL Occurrence (days hh:mm)	0 00:51
Total Exfiltration Volume (1000-ft ³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Project Description

File Name 16044 Kensington Place Ph 2 Drainage Post-Dev 25 YEAR.SPF
Description J:\Projects\2016 Projects\16044 Kensington Place Subdivision Lee Pengelly\Drawings\DWG\Phase 2\KENSINGTON PLACE PHASE 2 R4.dwg

Project Options

Flow Units CFS
Elevation Type Elevation
Hydrology Method Rational
Time of Concentration (TOC) Method SCS TR-55
Link Routing Method Kinematic Wave
Enable Overflow Ponding at Nodes YES
Skip Steady State Analysis Time Periods NO

Analysis Options

Start Analysis On Aug 18, 2017 00:00:00
End Analysis On Aug 19, 2017 00:00:00
Start Reporting On Aug 18, 2017 00:00:00
Antecedent Dry Days 0 days
Runoff (Dry Weather) Time Step 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step 0 00:05:00 days hh:mm:ss
Reporting Time Step 0 00:05:00 days hh:mm:ss
Routing Time Step 30 seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins.....	31
Nodes.....	28
<i>Junctions</i>	5
<i>Outfalls</i>	2
<i>Flow Diversions</i>	0
<i>Inlets</i>	20
<i>Storage Nodes</i>	1
Links.....	41
<i>Channels</i>	14
<i>Pipes</i>	25
<i>Pumps</i>	0
<i>Orifices</i>	1
<i>Weirs</i>	1
<i>Outlets</i>	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period..... 25 year(s)

Subbasin Summary

SN Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1 (STORM-BASINS).1	2.38	0.6100	3.19	1.95	4.63	3.87	0 01:11:46
2 (STORM-BASINS).10	0.87	0.6300	2.13	1.34	1.17	2.59	0 00:27:10
3 (STORM-BASINS).11	0.12	0.9000	0.70	0.63	0.07	0.87	0 00:05:00
4 (STORM-BASINS).12	0.16	0.9000	0.70	0.63	0.10	1.24	0 00:05:00
5 (STORM-BASINS).13	0.23	0.9000	0.70	0.63	0.14	1.74	0 00:05:00
6 (STORM-BASINS).14	0.74	0.7200	0.70	0.50	0.37	4.46	0 00:05:00
7 (STORM-BASINS).15	1.28	0.7200	0.70	0.50	0.65	7.77	0 00:05:00
8 (STORM-BASINS).16	0.21	0.7500	0.70	0.53	0.11	1.30	0 00:05:00
9 (STORM-BASINS).17	0.28	0.9000	0.70	0.63	0.17	2.09	0 00:05:00
10 (STORM-BASINS).18	3.51	0.6000	2.53	1.52	5.34	8.04	0 00:39:45
11 (STORM-BASINS).19	0.05	0.9000	0.70	0.63	0.03	0.40	0 00:05:00
12 (STORM-BASINS).2	0.96	0.6300	2.80	1.76	1.69	2.01	0 00:50:36
13 (STORM-BASINS).20	0.19	0.9000	0.70	0.63	0.12	1.47	0 00:05:00
14 (STORM-BASINS).21	0.22	0.9000	0.70	0.63	0.14	1.66	0 00:05:00
15 (STORM-BASINS).22	0.20	0.9000	0.70	0.63	0.13	1.50	0 00:05:00
16 (STORM-BASINS).23A	0.88	0.6000	2.30	1.38	1.22	2.29	0 00:31:54
17 (STORM-BASINS).23B	0.21	0.9000	0.70	0.63	0.13	1.58	0 00:05:00
18 (STORM-BASINS).26	1.06	0.6000	2.42	1.45	1.53	2.57	0 00:35:44
19 (STORM-BASINS).27	0.58	0.7200	1.61	1.16	0.67	2.52	0 00:15:56
20 (STORM-BASINS).28	0.22	0.7200	1.70	1.22	0.27	0.92	0 00:17:36
21 (STORM-BASINS).29	0.15	0.9000	0.70	0.63	0.10	1.16	0 00:05:00
22 (STORM-BASINS).3	1.34	0.6300	2.28	1.44	1.92	3.73	0 00:30:46
23 (STORM-BASINS).30	0.12	0.9000	0.70	0.63	0.08	0.92	0 00:05:00
24 (STORM-BASINS).31	0.12	0.9000	0.70	0.63	0.07	0.89	0 00:05:00
25 (STORM-BASINS).4	0.17	0.7500	1.52	1.14	0.20	0.81	0 00:14:33
26 (STORM-BASINS).5	0.46	0.6900	1.65	1.14	0.52	1.84	0 00:17:04
27 (STORM-BASINS).6	1.73	0.6000	2.29	1.38	2.38	4.55	0 00:31:16
28 (STORM-BASINS).7A	0.38	0.6600	2.28	1.51	0.57	1.11	0 00:30:58
29 (STORM-BASINS).7B	0.28	0.7200	1.96	1.41	0.39	1.00	0 00:23:23
30 (STORM-BASINS).8	2.66	0.6000	2.76	1.65	4.41	5.39	0 00:49:03
31 (STORM-BASINS).9	0.06	0.9000	0.70	0.63	0.03	0.42	0 00:05:00

Node Summary

SN Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation	Ponded Area	Peak Inflow	Max HGL Elevation Attained	Max Surcharge Depth Attained	Min Freeboard	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded	
		(ft)	(ft)	(ft)	(ft)	(ft²)	(cfs)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)	
1	CB-I1	Junction	476.43	480.49	476.43	480.49	0.00	9.48	477.54	0.00	2.95	0 00:00	0.00	0.00
2	CONNECT-G	Junction	483.22	485.22	483.22	485.22	0.00	7.23	484.12	0.00	1.10	0 00:00	0.00	0.00
3	CONNECT-I	Junction	483.38	489.38	483.38	489.38	0.00	4.59	483.91	0.00	5.47	0 00:00	0.00	0.00
4	FES-H2	Junction	482.37	485.12	482.37	485.12	0.00	17.66	483.37	0.00	1.75	0 00:00	0.00	0.00
5	Jun-01	Junction	473.29	477.00	473.29	477.00	0.00	22.27	474.90	0.00	2.10	0 00:00	0.00	0.00
6	Out-01	Outfall	473.16					22.27	474.77					
7	Out-1ST-G3	Outfall	475.00					0.00	475.00					
8	POND1	Storage Node	473.29	477.00	473.29		0.00	32.97	475.71			0.00	0.00	

Link Summary

SN Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/Total Depth Ratio	Total Time Reported (min)	Surcharged Condition
1	ST-C1	Pipe	CB-C1 (EXIST) CONNECT-G	92.51	483.78	483.22	0.6000	24.000	0.0130	7.23	17.52	0.41	5.32	0.90	0.45	0.00	Calculated
2	ST-C2	Pipe	CB-C2 (EXIST) CB-C1 (EXIST)	200.00	490.63	483.88	3.3800	18.000	0.0130	1.05	19.30	0.05	7.08	0.24	0.16	0.00	Calculated
3	ST-C3	Pipe	CB-C3 (EXIST) CB-C2 (EXIST)	32.02	490.95	490.63	1.0000	18.000	0.0130	0.41	10.50	0.04	2.87	0.20	0.13	0.00	Calculated
4	ST-CS1	Pipe	Jun-01 Out-01	24.64	473.29	473.16	0.5300	30.000	0.0130	22.27	29.79	0.75	6.66	1.61	0.64	0.00	Calculated
5	ST-D1	Pipe	CB-D1 (EXIST) CB-C1 (EXIST)	32.02	484.10	483.88	0.6900	18.000	0.0130	3.25	8.71	0.37	4.57	0.63	0.42	0.00	Calculated
6	ST-E1 (2)	Pipe	CB-E1 (EXIST) CONNECT-I	133.90	487.00	483.38	2.7000	18.000	0.0130	4.59	17.26	0.27	8.29	0.53	0.35	0.00	Calculated
7	ST-E2 (EXIST)	Pipe	CB-E2 (EXIST) CB-E1 (EXIST)	200.00	496.73	487.10	4.8100	18.000	0.0130	2.33	23.05	0.10	8.44	0.32	0.21	0.00	Calculated
8	ST-E3 (EXIST)	Pipe	CB-E3 (EXIST) CB-E2 (EXIST)	32.02	497.60	496.83	2.4000	18.000	0.0130	1.30	16.27	0.08	6.39	0.29	0.19	0.00	Calculated
9	ST-F1 (EXIST)	Pipe	CB-F1 (EXIST) CB-E1 (EXIST)	32.02	487.57	487.10	1.4600	18.000	0.0130	1.41	12.70	0.11	4.74	0.34	0.22	0.00	Calculated
10	ST-G1	Pipe	CB-G2 POND1	72.10	474.50	473.92	0.8000	30.000	0.0130	32.61	36.79	0.89	8.48	1.83	0.73	0.00	Calculated
11	ST-G2	Pipe	CB-G3 CB-G2	31.99	474.85	474.50	1.0900	30.000	0.0130	30.37	42.90	0.71	9.48	1.55	0.62	0.00	Calculated
12	ST-G3	Pipe	CB-G4 CB-G3	49.09	476.90	474.95	3.9700	24.000	0.0130	9.82	45.08	0.22	11.48	0.63	0.32	0.00	Calculated
13	ST-G4	Pipe	CB-G5 CB-G4	238.61	482.36	476.90	2.2900	24.000	0.0130	9.18	34.22	0.27	9.24	0.71	0.35	0.00	Calculated
14	ST-G5	Pipe	CONNECT-G CB-G5	145.74	483.22	482.35	0.6000	24.000	0.0130	7.23	17.44	0.41	5.30	0.90	0.45	0.00	Calculated
15	ST-H1	Pipe	CB-H1 CB-G3	190.63	476.09	474.95	0.6000	30.000	0.0130	26.98	31.72	0.85	7.36	1.77	0.71	0.00	Calculated
16	ST-H2	Pipe	FES-H2 CB-H1	252.90	482.37	476.19	2.4400	24.000	0.0130	17.56	35.36	0.50	11.33	1.00	0.50	0.00	Calculated
17	ST-H2A	Pipe	CB-H2 FES-H2	37.10	483.38	482.37	2.7200	24.000	0.0130	17.66	37.32	0.47	11.72	0.97	0.48	0.00	Calculated
18	ST-H3	Pipe	CB-H3 CB-H2	48.08	483.88	483.38	1.0400	24.000	0.0130	16.58	23.11	0.72	8.01	1.25	0.63	0.00	Calculated
19	ST-H5	Pipe	CB-H5 CB-H3	378.49	485.87	483.98	0.5000	24.000	0.0130	15.05	16.01	0.94	6.16	1.52	0.76	0.00	Calculated
20	ST-H6	Pipe	CB-H6 CB-H5	32.00	488.21	487.89	1.0000	18.000	0.0130	4.59	10.50	0.44	5.75	0.69	0.46	0.00	Calculated
21	ST-I1	Pipe	CB-I1 CB-H1	48.08	476.43	476.19	0.5000	24.000	0.0130	9.48	16.00	0.59	5.31	1.11	0.55	0.00	Calculated
22	ST-I2	Pipe	CB-I2 CB-I1	95.00	476.91	476.43	0.5100	24.000	0.0130	9.48	16.08	0.59	5.33	1.10	0.55	0.00	Calculated
23	ST-I3	Pipe	CB-I3 CB-I2	212.56	479.00	477.00	0.9400	18.000	0.0130	5.05	10.19	0.50	5.83	0.74	0.50	0.00	Calculated
24	ST-I4	Pipe	CONNECT-I CB-I3	78.66	483.38	481.27	2.6900	18.000	0.0130	4.58	17.22	0.27	8.25	0.53	0.35	0.00	Calculated
25	ST-K1	Pipe	CB-K1 CB-I2	32.05	477.32	477.00	1.0000	18.000	0.0130	8.04	19.20	0.42	10.39	0.68	0.45	0.00	Calculated
26	Gutter-05	Channel	CB-C3 (EXIST) CB-D1 (EXIST)	200.35	495.00	487.00	3.9900	6.000	0.0130	0.38	9.52	0.04	3.41	0.15	0.29	0.00	
27	Gutter-06	Channel	CB-C2 (EXIST) CB-C1 (EXIST)	200.99	495.00	487.00	3.9800	6.000	0.0130	1.11	9.50	0.12	3.90	0.22	0.44	0.00	
28	Gutter-07	Channel	CB-C1 (EXIST) CB-G5	239.28	487.00	485.61	0.5800	6.000	0.0130	0.96	3.83	0.25	1.79	0.29	0.58	0.00	
29	Gutter-08	Channel	CB-G5 CB-G4	240.40	485.61	480.15	2.2700	6.000	0.0320	0.00	7.18	0.00	0.28	0.01	0.02	0.00	
30	Gutter-09	Channel	CB-G4 CB-G3	57.48	480.15	478.65	2.6100	6.000	0.0320	0.00	7.33	0.00	0.00	0.00	0.00	0.00	
31	Gutter-10	Channel	CB-H1 CB-G3	192.99	480.66	478.79	0.9700	6.000	0.0320	0.16	4.69	0.03	2.42	0.13	0.26	0.00	
32	Gutter-12	Channel	CB-I3 CB-I2	213.95	483.97	479.50	2.0900	6.000	0.0320	0.06	6.51	0.01	1.81	0.08	0.17	0.00	
33	Gutter-13	Channel	CB-E1 (EXIST) CB-I3	213.94	491.00	483.97	3.2900	6.000	0.0320	0.00	9.03	0.00	0.00	0.00	0.00	0.00	
34	Gutter-14	Channel	CB-E2 (EXIST) CB-E1 (EXIST)	201.82	500.50	491.00	4.7100	6.000	0.0320	0.10	10.29	0.01	3.76	0.09	0.17	0.00	
35	Gutter-15	Channel	CB-E3 (EXIST) CB-F1 (EXIST)	201.21	500.50	491.00	4.7200	6.000	0.0320	0.31	10.48	0.03	4.50	0.13	0.26	0.00	
36	Gutter-16	Channel	CB-F1 (EXIST) CB-K1	425.27	491.00	482.00	2.1200	6.000	0.0320	0.00	7.04	0.00	0.00	0.00	0.00	0.00	
37	Gutter-17	Channel	CB-H2 CB-H1	292.35	485.12	480.66	1.5200	6.000	0.0320	0.17	5.88	0.03	2.14	0.13	0.25	0.00	
38	Gutter-23	Channel	CB-D1 (EXIST) CB-G2	587.46	487.00	479.00	1.3600	6.000	0.0320	0.39	5.55	0.07	2.61	0.18	0.35	0.00	
39	Gutter-26	Channel	CB-H3 CB-H2	57.06	490.37	485.12	9.2000	6.000	0.0320	0.91	14.45	0.06	3.39	0.18	0.35	0.00	
40	Orifice-01	Orifice	POND1 Jun-01		473.29	473.29		26.500		22.27							
41	Weir-02	Weir	POND1 Jun-01		473.29	473.29				0.00							

Inlet Summary

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft ²)	Peak Flow (cfs)	Peak Flow Intercepted (cfs)	Peak Flow Bypassing Inlet (cfs)	Peak Flow Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	
1 CB-C1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.78	487.16	483.78	N/A	4.77	3.76	1.01	78.78	12.00	10.15	487.43
2 CB-C2 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	490.63	495.14	490.63	N/A	1.84	0.69	1.16	37.23	12.00	3.97	495.37
3 CB-C3 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	490.95	495.16	490.95	N/A	0.81	0.41	0.40	50.26	12.00	2.79	495.32
4 CB-D1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	484.10	487.17	484.10	N/A	3.76	3.25	0.51	86.32	12.00	9.22	487.41
5 CB-E1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	487.00	491.64	487.00	N/A	0.88	0.88	0.00	100.00	12.00	4.77	491.80
6 CB-E2 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	496.73	501.05	496.73	N/A	1.24	1.06	0.18	85.16	12.00	5.68	501.23
7 CB-E3 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	497.60	501.00	497.60	N/A	1.74	1.30	0.43	75.04	12.00	6.63	501.20
8 CB-F1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	487.57	491.28	487.57	N/A	1.41	1.41	0.00	100.00	12.00	6.03	491.46
9 CB-G2	FHWA HEC-22	GENERIC	N/A	On Sag	1	474.50	479.18	474.50	0.00	3.17	N/A	N/A	N/A	12.00	9.87	479.94
10 CB-G3	FHWA HEC-22	GENERIC	N/A	On Sag	1	474.85	478.79	474.85	0.00	5.39	N/A	N/A	N/A	12.00	14.08	479.63
11 CB-G4	FHWA HEC-22	GENERIC	N/A	On Grade	1	476.90	480.15	476.90	N/A	1.00	1.00	0.00	100.00	12.00	5.17	480.32
12 CB-G5	FHWA HEC-22	GENERIC	N/A	On Grade	1	482.36	485.61	482.36	N/A	2.00	2.00	0.00	99.95	12.00	7.08	485.82
13 CB-H1	FHWA HEC-22	GENERIC	N/A	On Grade	1	476.09	480.66	476.09	N/A	1.47	1.18	0.28	80.65	12.00	6.16	480.85
14 CB-H2	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.38	485.12	483.38	N/A	1.76	1.51	0.25	86.01	12.00	8.44	485.35
15 CB-H3	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.88	490.37	483.88	N/A	2.52	1.60	0.92	63.61	12.00	7.81	490.59
16 CB-H5	FHWA HEC-22	GENERIC	N/A	On Sag	1	485.87	488.55	485.87	0.00	12.22	N/A	N/A	N/A	12.00	24.31	489.60
17 CB-H6	FHWA HEC-22	GENERIC	N/A	On Sag	1	488.21	488.55	488.21	0.00	4.59	N/A	N/A	N/A	12.00	12.64	489.37
18 CB-I2	FHWA HEC-22	GENERIC	N/A	On Sag	1	476.91	479.97	476.91	0.00	0.42	N/A	N/A	N/A	12.00	1.90	480.24
19 CB-I3	FHWA HEC-22	GENERIC	N/A	On Grade	1	479.00	483.97	479.00	N/A	2.58	2.49	0.09	96.42	12.00	7.88	484.19
20 CB-K1	FHWA HEC-22	GENERIC	N/A	On Sag	1	478.07	482.00	478.07	0.00	8.04	N/A	N/A	N/A	12.00	18.40	482.96

Subbasin Hydrology

Subbasin : {STORM-BASINS}.1

Input Data

Area (ac) 2.38
Weighted Runoff Coefficient 0.6100

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
Residential	1.66	-	0.70
Pasture	0.71	-	0.40
Composite Area & Weighted Runoff Coeff.	2.37		0.61

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8}) / ((P^{0.5}) * (S_f^{0.4})))$$

Where :

T_c = Time of Concentration (hr)
n = Manning's roughness
L_f = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
S_f = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (S_f^{0.5}) (unpaved surface)
V = 20.3282 * (S_f^{0.5}) (paved surface)
V = 15.0 * (S_f^{0.5}) (grassed waterway surface)
V = 10.0 * (S_f^{0.5}) (nearly bare & untilled surface)
V = 9.0 * (S_f^{0.5}) (cultivated straight rows surface)
V = 7.0 * (S_f^{0.5}) (short grass pasture surface)
V = 5.0 * (S_f^{0.5}) (woodland surface)
V = 2.5 * (S_f^{0.5}) (forest w/heavy litter surface)
T_c = (L_f / V) / (3600 sec/hr)

Where:

T_c = Time of Concentration (hr)
L_f = Flow Length (ft)
V = Velocity (ft/sec)
S_f = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n
R = A_q / W_p
T_c = (L_f / V) / (3600 sec/hr)

Where :

T_c = Time of Concentration (hr)
L_f = Flow Length (ft)
R = Hydraulic Radius (ft)
A_q = Flow Area (ft²)
W_p = Wetted Perimeter (ft)
V = Velocity (ft/sec)
S_f = Slope (ft/ft)
n = Manning's roughness

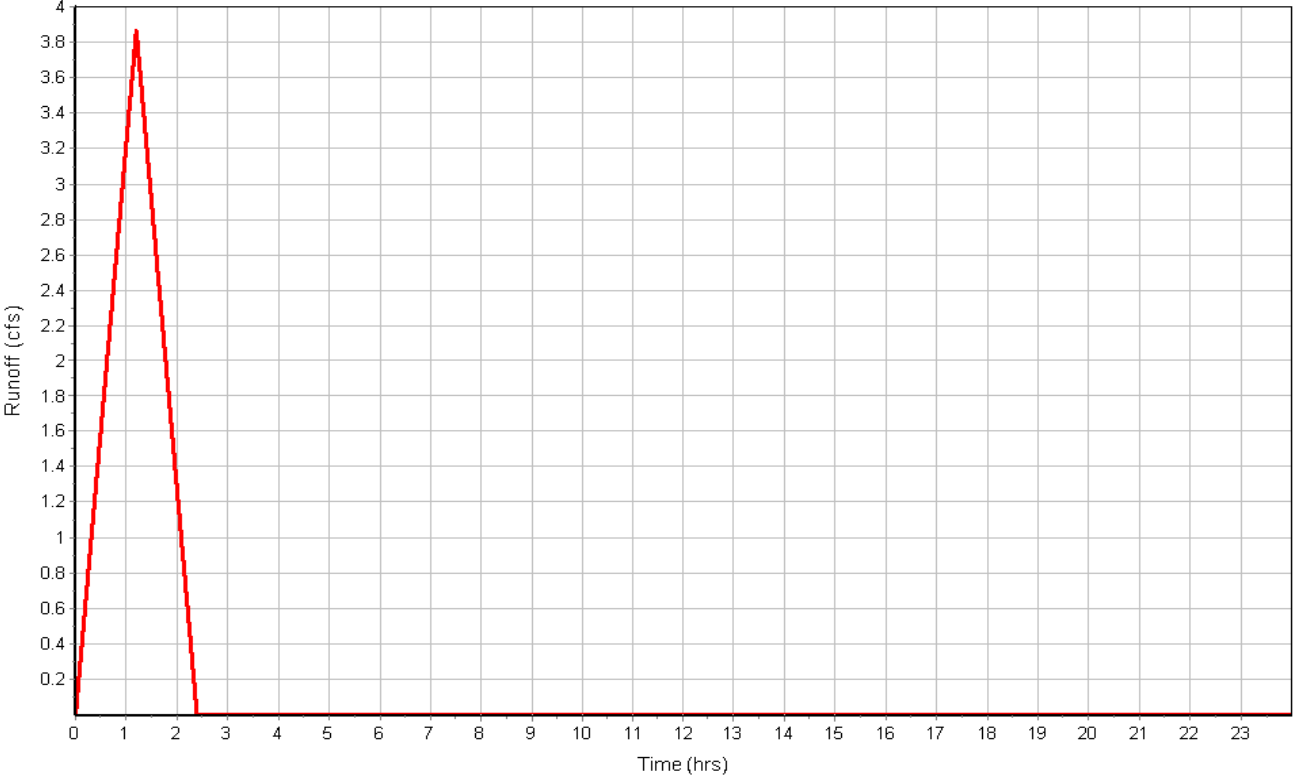
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	1221.57	0.00	0.00
Slope (%) :	2.6	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.28	0.00	0.00
Computed Flow Time (min) :	71.78	0.00	0.00
Total TOC (min)	71.78		

Subbasin Runoff Results

Total Rainfall (in)	3.19
Total Runoff (in)	1.95
Peak Runoff (cfs)	3.87
Rainfall Intensity	2.666
Weighted Runoff Coefficient	0.6100
Time of Concentration (days hh:mm:ss)	0 01:11:47

Subbasin : {STORM-BASINS}.1

Runoff Hydrograph



Subbasin : {STORM-BASINS}.10

Input Data

Area (ac) 0.87
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.78	-	0.60
-	0.09	-	0.90
Composite Area & Weighted Runoff Coeff.	0.87		0.63

Time of Concentration

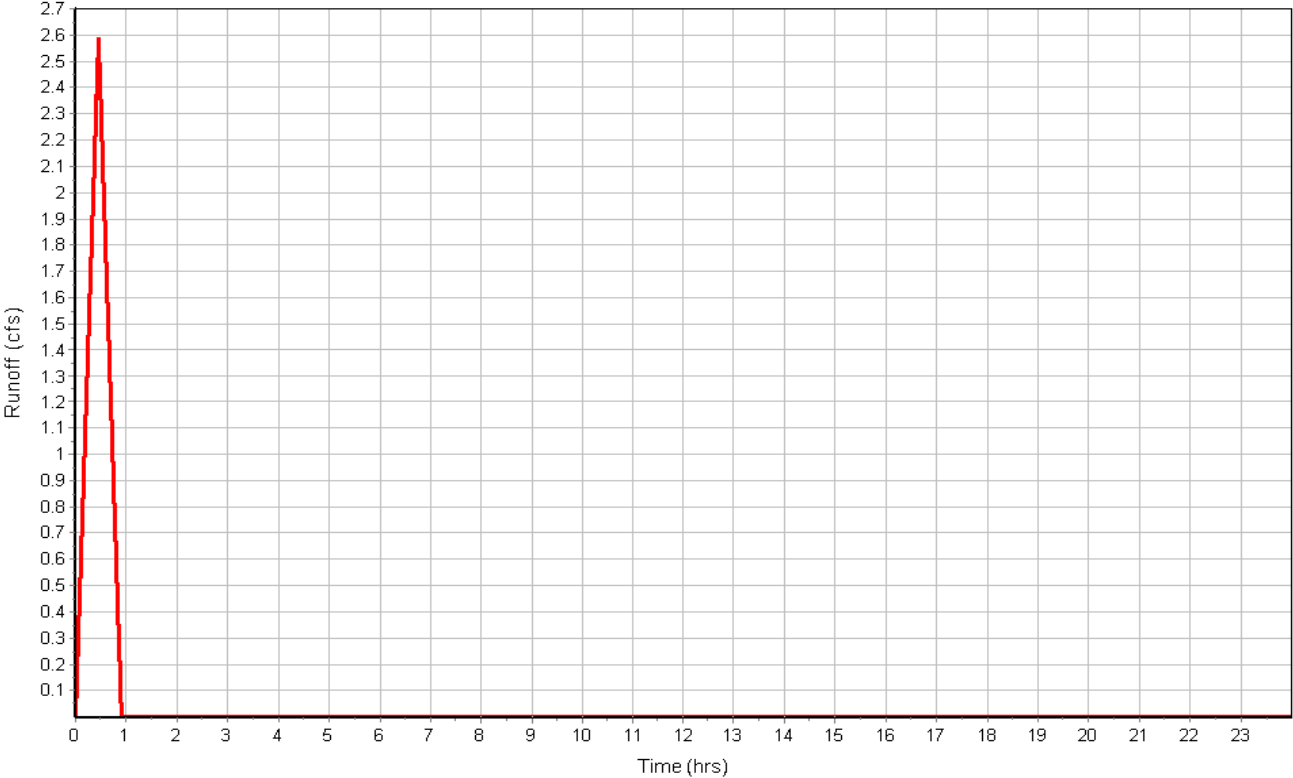
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	421.06	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.26	0.00	0.00
Computed Flow Time (min) :	27.18	0.00	0.00
Total TOC (min)	27.18		

Subbasin Runoff Results

Total Rainfall (in) 2.13
 Total Runoff (in) 1.34
 Peak Runoff (cfs) 2.59
 Rainfall Intensity 4.710
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:27:11

Subbasin : {STORM-BASINS}.10

Runoff Hydrograph



Subbasin : {STORM-BASINS}.11

Input Data

Area (ac) 0.12
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

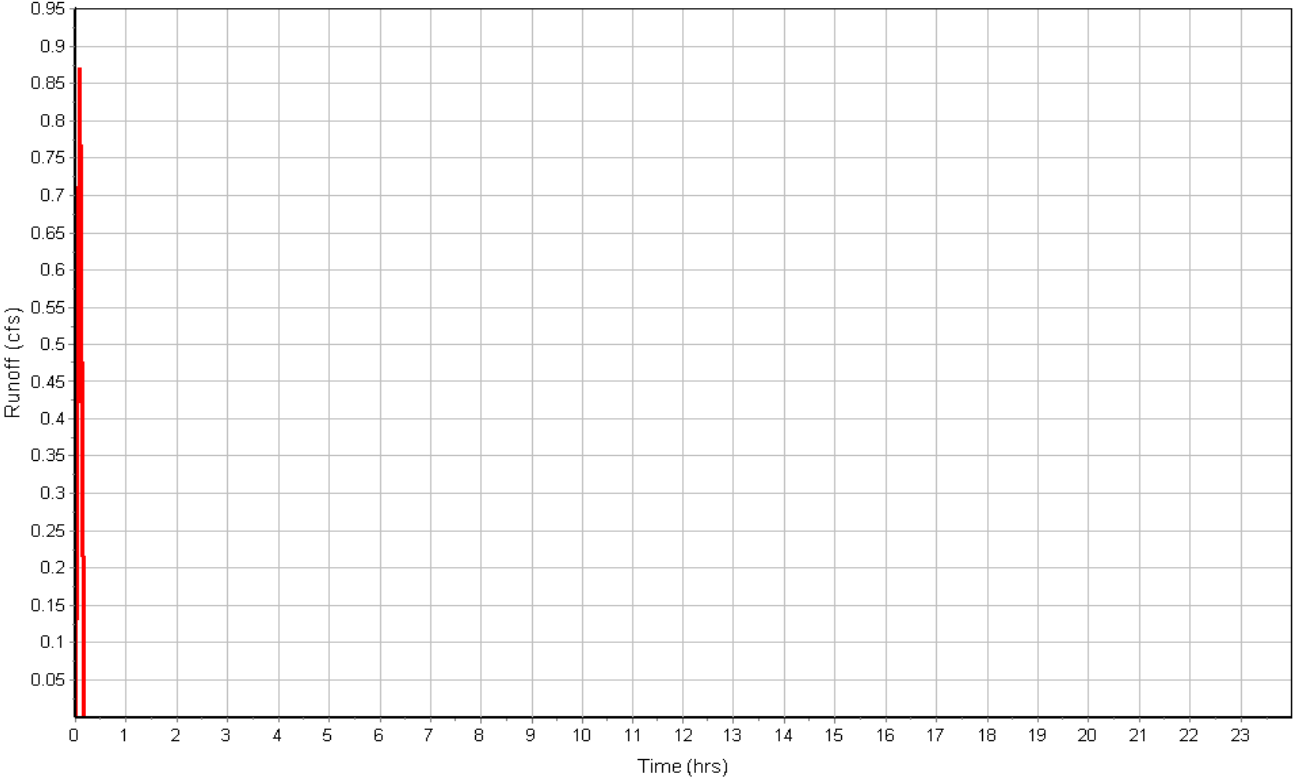
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	251.93	0.00	0.00
Slope (%) :	4.7	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	4.41	0.00	0.00
Computed Flow Time (min) :	0.95	0.00	0.00
Total TOC (min)0.95			

Subbasin Runoff Results

Total Rainfall (in) 0.70
Total Runoff (in) 0.63
Peak Runoff (cfs) 0.87
Rainfall Intensity 8.400
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:57

Subbasin : {STORM-BASINS}.11

Runoff Hydrograph



Subbasin : {STORM-BASINS}.12

Input Data

Area (ac) 0.16
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.16	-	0.90
Composite Area & Weighted Runoff Coeff.	0.16		0.90

Time of Concentration

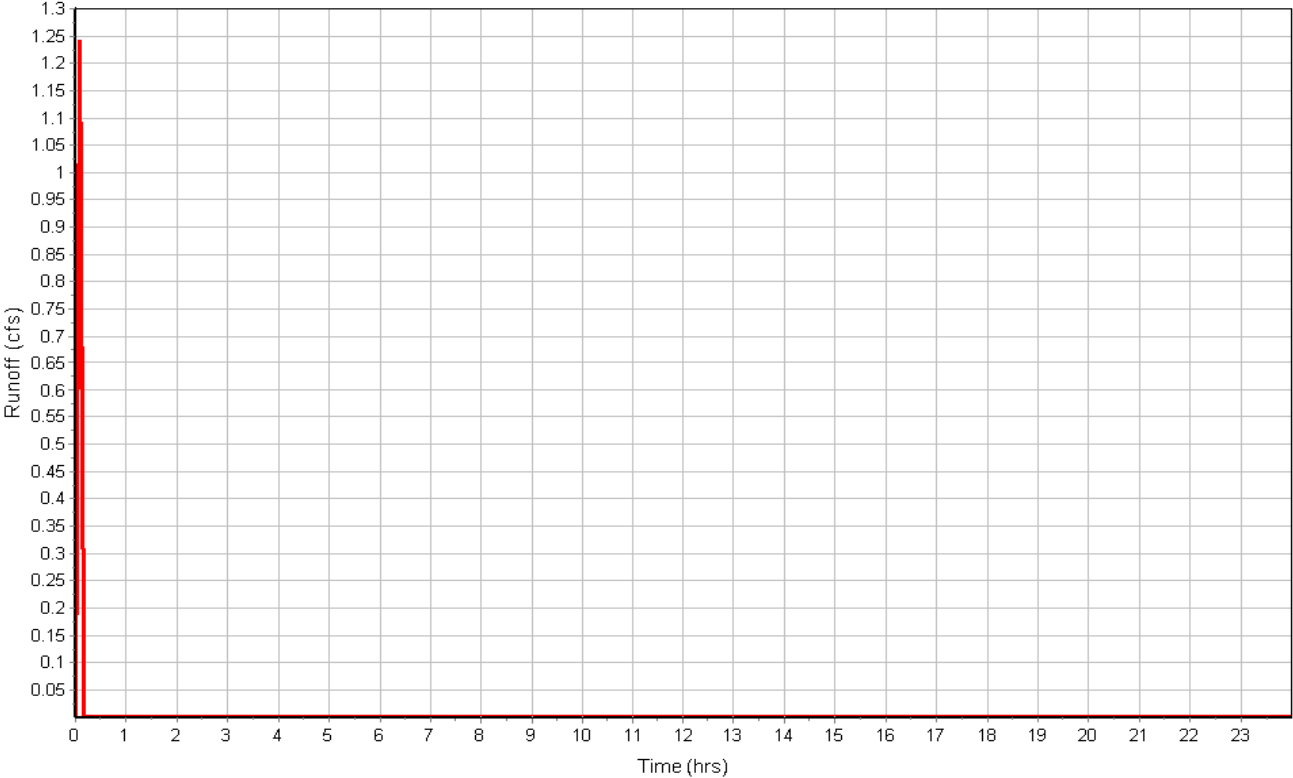
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	261.41	0.00	0.00
Slope (%) :	1.9	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.80	0.00	0.00
Computed Flow Time (min) :	1.56	0.00	0.00
Total TOC (min)	1.56		

Subbasin Runoff Results

Total Rainfall (in) 0.70
Total Runoff (in) 0.63
Peak Runoff (cfs) 1.24
Rainfall Intensity 8.400
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:34

Subbasin : {STORM-BASINS}.12

Runoff Hydrograph



Subbasin : {STORM-BASINS}.13

Input Data

Area (ac) 0.23
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.23	-	0.90
Composite Area & Weighted Runoff Coeff.	0.23		0.90

Time of Concentration

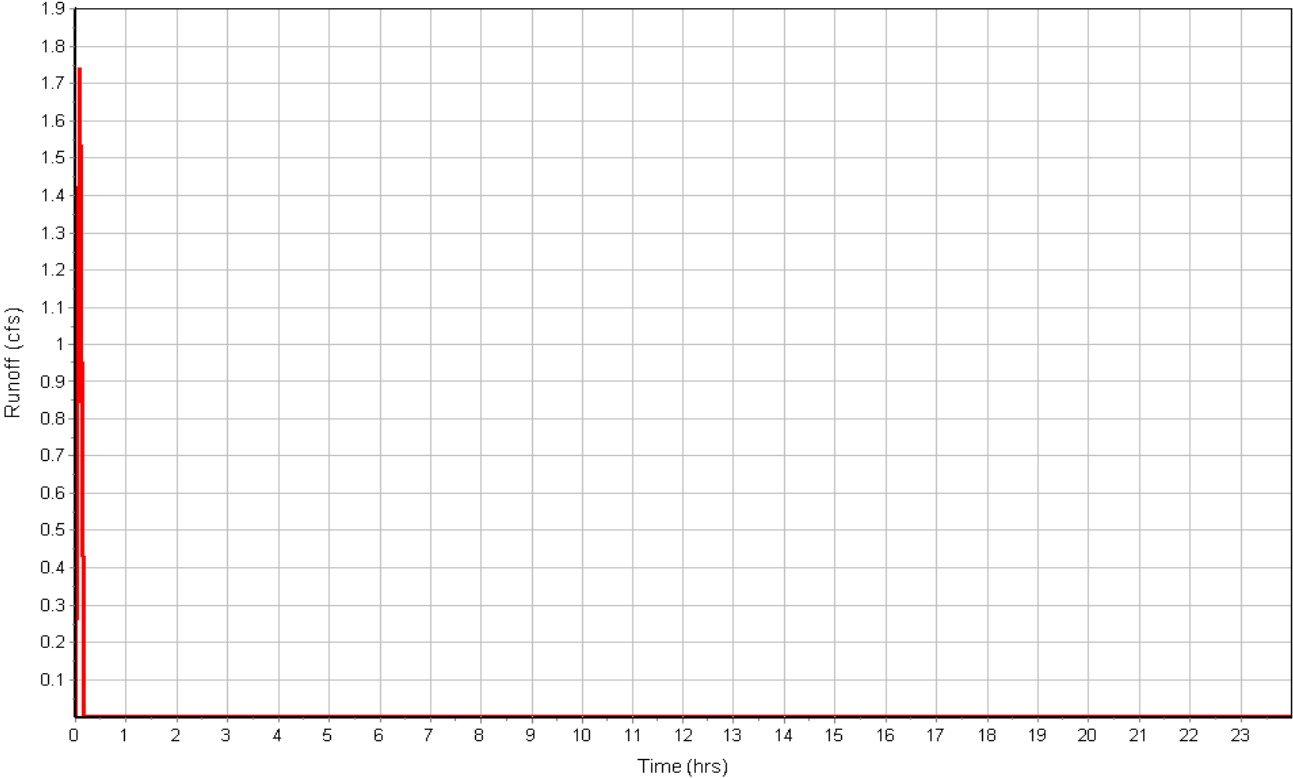
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	407.22	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	2.36	0.00	0.00
Total TOC (min)	2.36		

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 1.74
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:02:22

Subbasin : {STORM-BASINS}.13

Runoff Hydrograph



Subbasin : {STORM-BASINS}.14

Input Data

Area (ac) 0.74
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.74	-	0.72
Composite Area & Weighted Runoff Coeff.	0.74		0.72

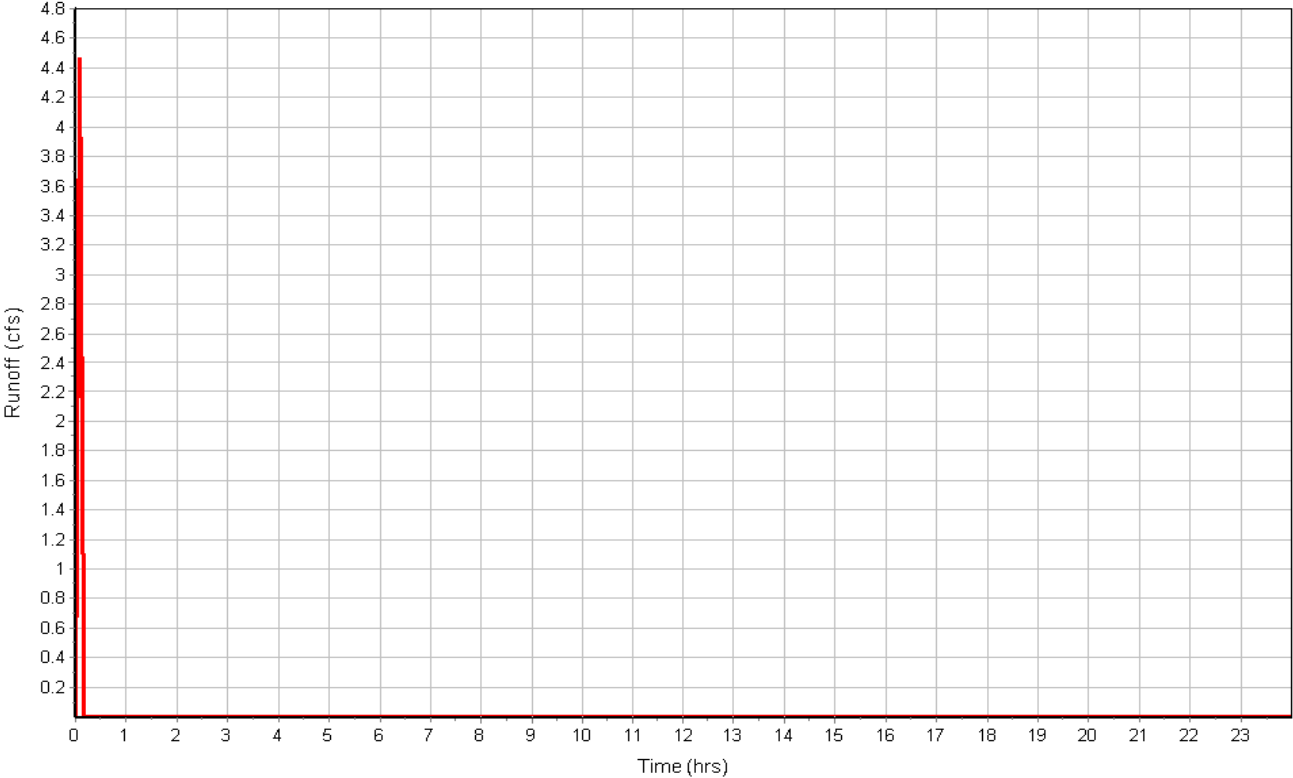
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.70
Total Runoff (in) 0.50
Peak Runoff (cfs) 4.46
Rainfall Intensity 8.400
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.14

Runoff Hydrograph



Subbasin : {STORM-BASINS}.15

Input Data

Area (ac) 1.28
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.28	-	0.72
Composite Area & Weighted Runoff Coeff.	1.28		0.72

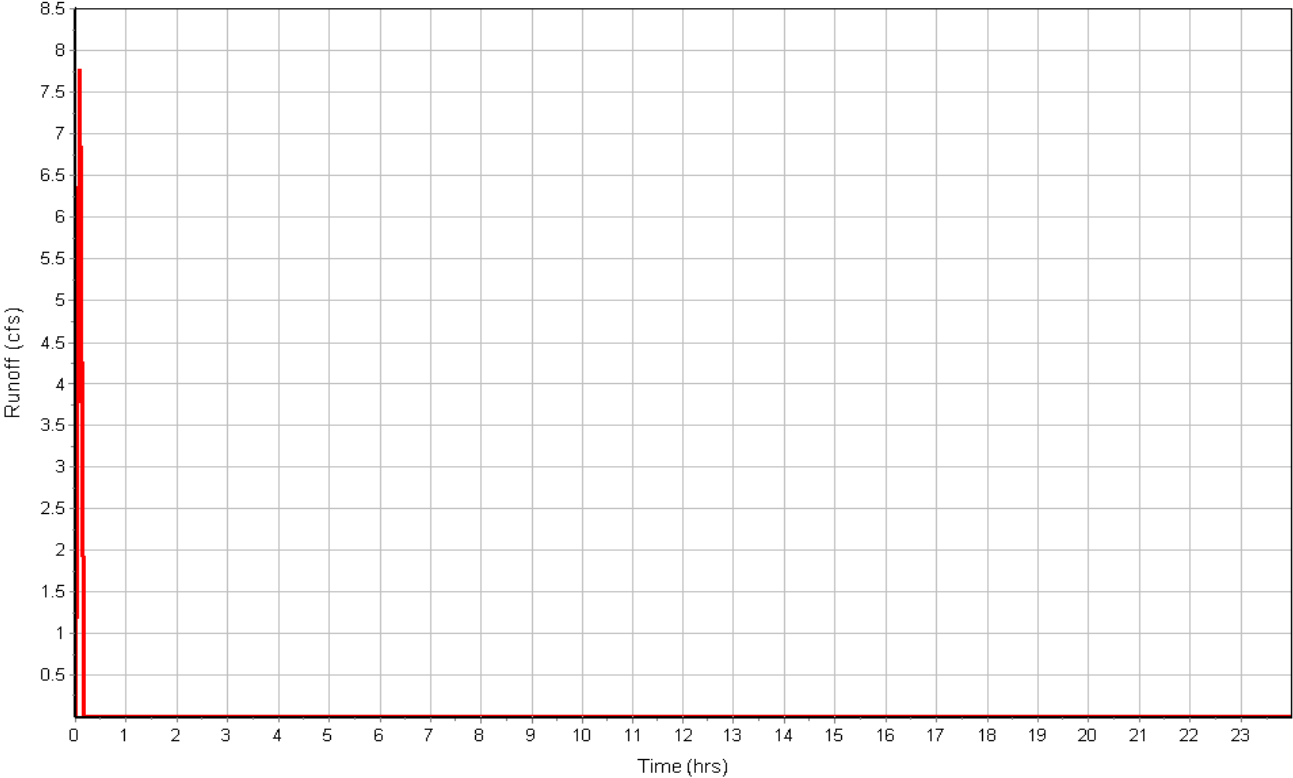
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.70
Total Runoff (in) 0.50
Peak Runoff (cfs) 7.77
Rainfall Intensity 8.400
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.15

Runoff Hydrograph



Subbasin : {STORM-BASINS}.16

Input Data

Area (ac) 0.21
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.10	-	0.90
-	0.10	-	0.60
Composite Area & Weighted Runoff Coeff.	0.20		0.75

Time of Concentration

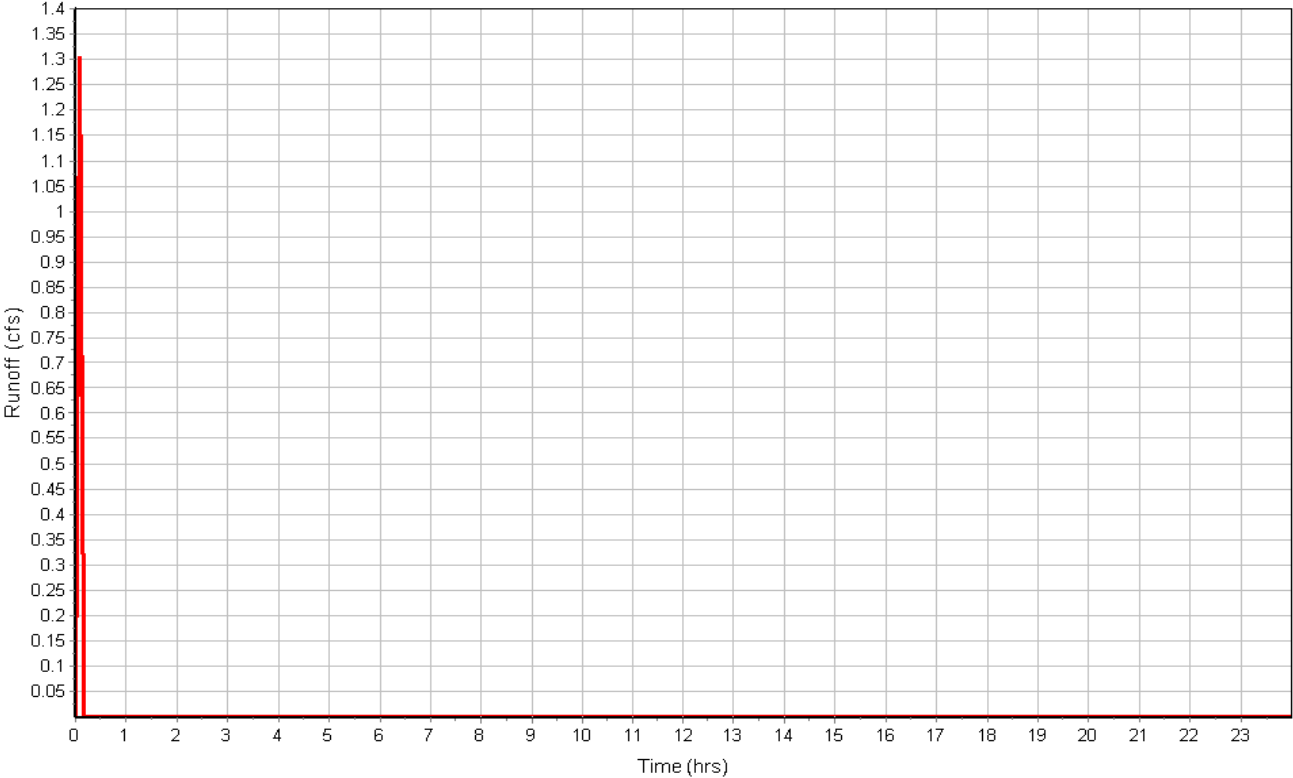
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	45.99	0.00	0.00
Slope (%) :	5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.19	0.00	0.00
Computed Flow Time (min) :	4.01	0.00	0.00
Total TOC (min)	4.01		

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.53
 Peak Runoff (cfs) 1.30
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:04:01

Subbasin : {STORM-BASINS}.16

Runoff Hydrograph



Subbasin : {STORM-BASINS}.17

Input Data

Area (ac) 0.28
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.28	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.90

Time of Concentration

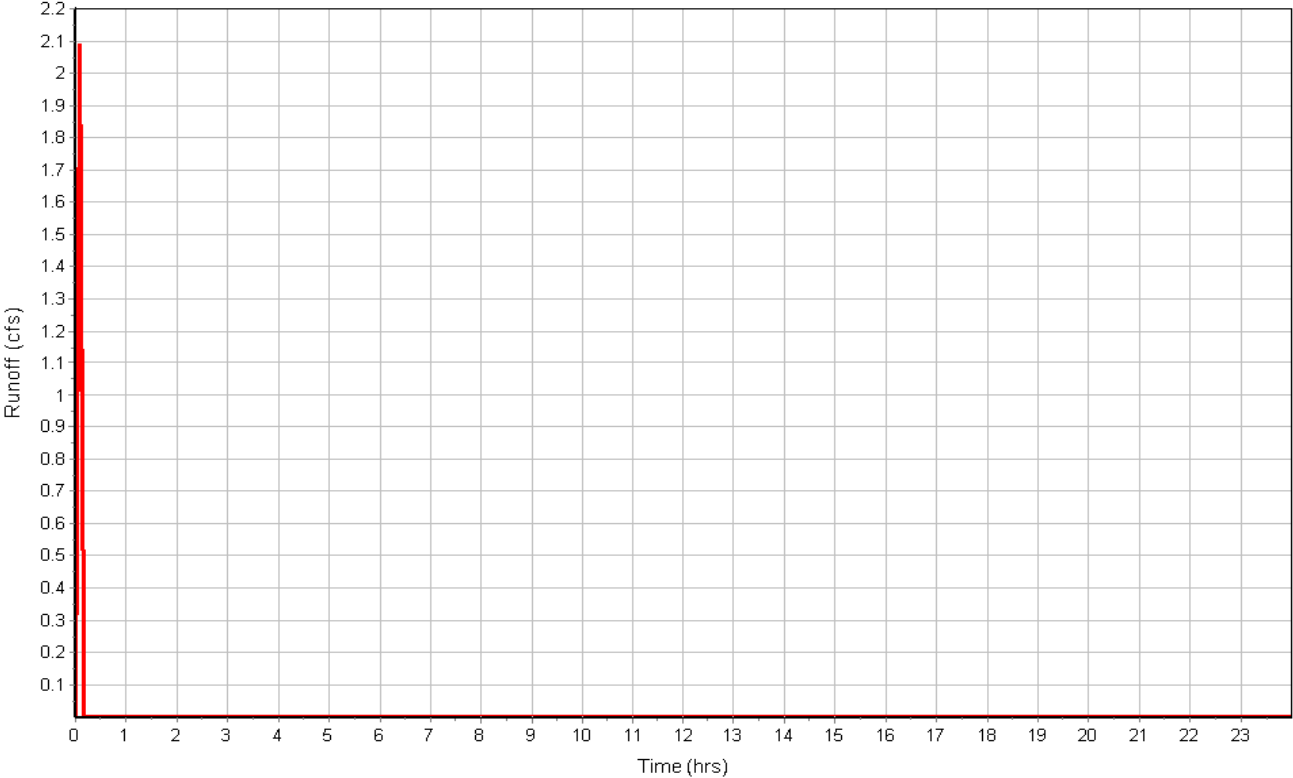
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	400.01	0.00	0.00
Slope (%) :	3.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.80	0.00	0.00
Computed Flow Time (min) :	1.75	0.00	0.00
Total TOC (min)1.75			

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 2.09
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:45

Subbasin : {STORM-BASINS}.17

Runoff Hydrograph



Subbasin : {STORM-BASINS}.18

Input Data

Area (ac) 3.51
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	3.51	-	0.60
Composite Area & Weighted Runoff Coeff.	3.51		0.60

Time of Concentration

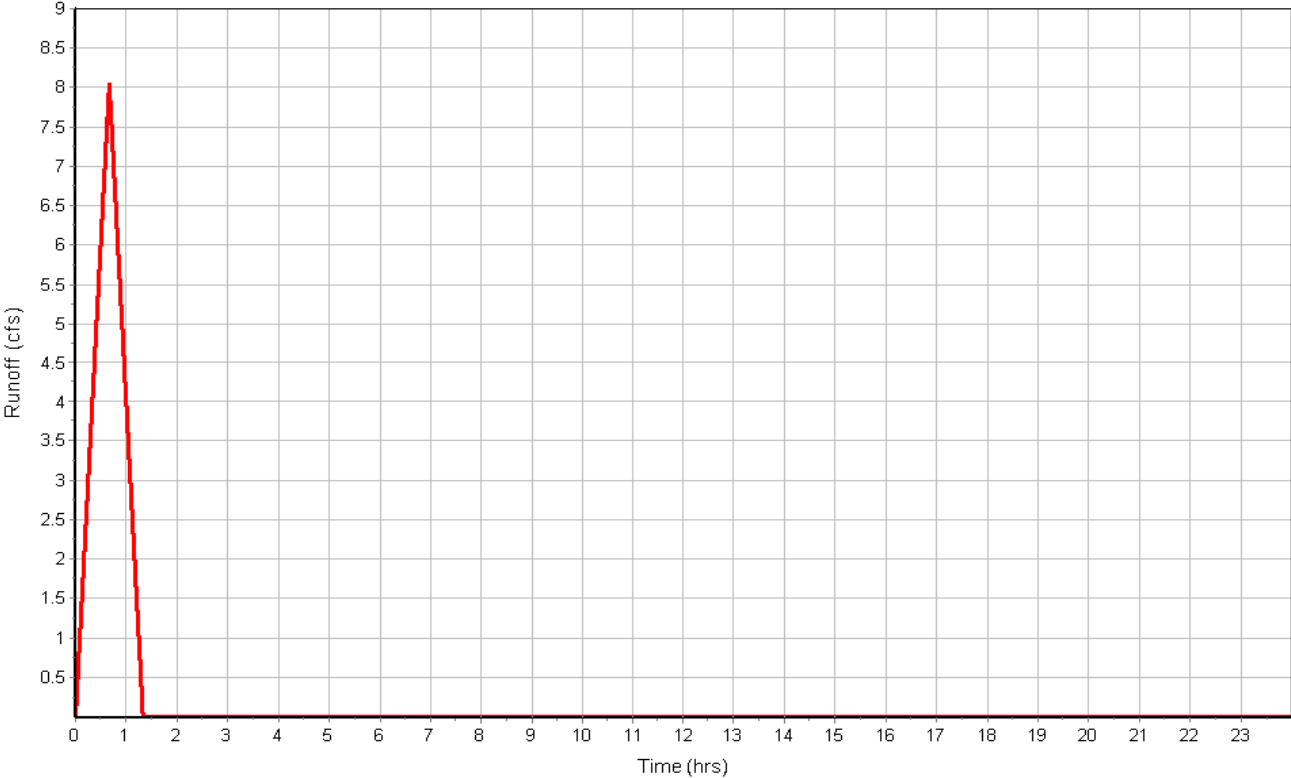
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	723.77	0.00	0.00
Slope (%) :	4	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	39.75	0.00	0.00
Total TOC (min)	39.75		

Subbasin Runoff Results

Total Rainfall (in) 2.53
 Total Runoff (in) 1.52
 Peak Runoff (cfs) 8.04
 Rainfall Intensity 3.817
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:39:45

Subbasin : {STORM-BASINS}.18

Runoff Hydrograph



Subbasin : {STORM-BASINS}.19

Input Data

Area (ac) 0.05
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.05	-	0.90
Composite Area & Weighted Runoff Coeff.	0.05		0.90

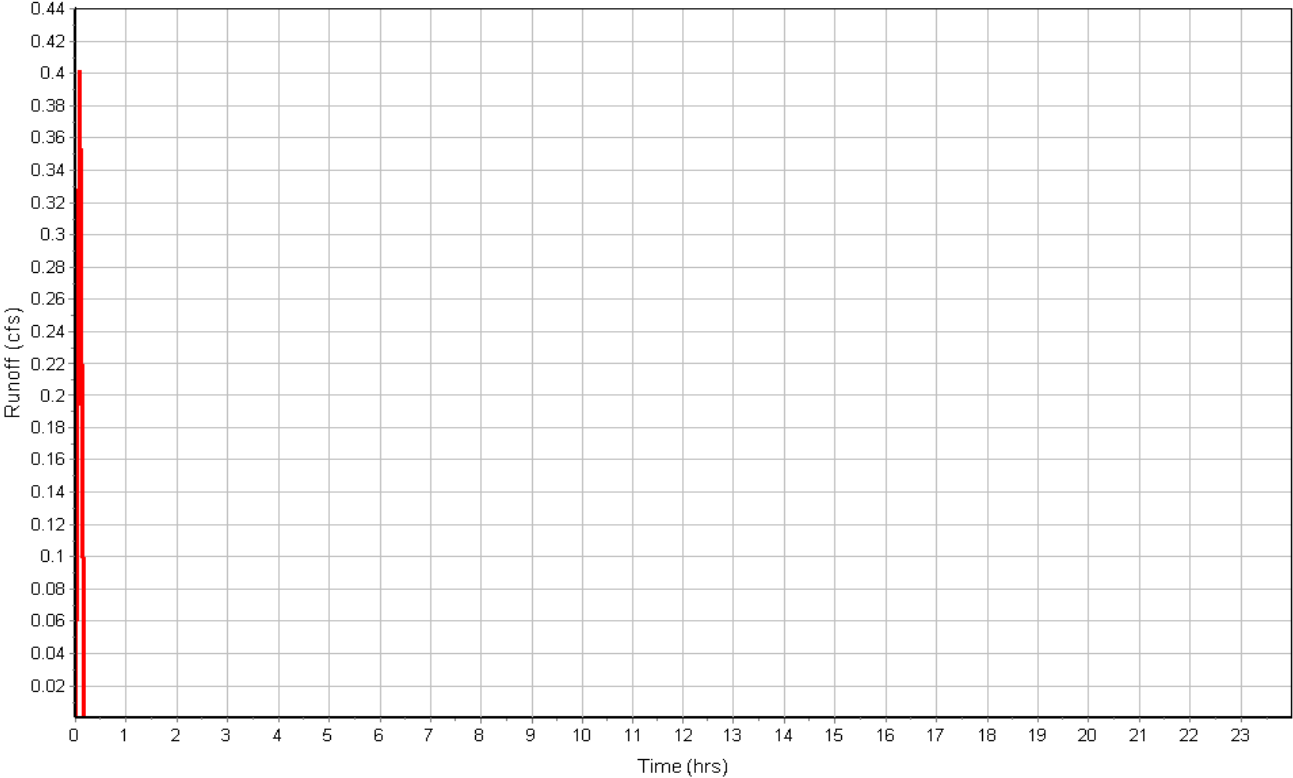
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.70
Total Runoff (in) 0.63
Peak Runoff (cfs) 0.40
Rainfall Intensity 8.400
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.19

Runoff Hydrograph



Subbasin : {STORM-BASINS}.2

Input Data

Area (ac) 0.96
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.86	-	0.60
-	0.10	-	0.90
Composite Area & Weighted Runoff Coeff.	0.96		0.63

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	606.64	0.00	0.00
Slope (%) :	1.8	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	47.50	0.00	0.00

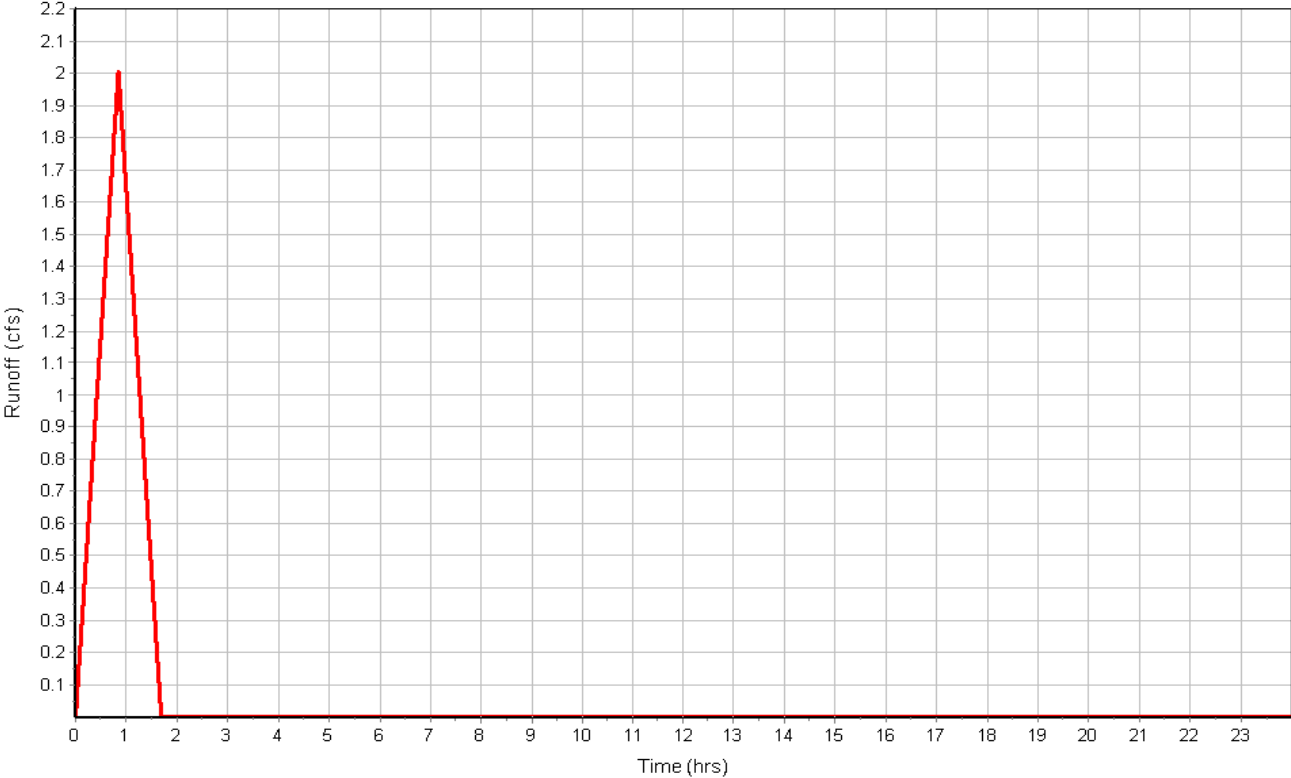
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	533.67	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	3.10	0.00	0.00
Total TOC (min)	50.60		

Subbasin Runoff Results

Total Rainfall (in) 2.80
 Total Runoff (in) 1.76
 Peak Runoff (cfs) 2.01
 Rainfall Intensity 3.314
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:50:36

Subbasin : {STORM-BASINS}.2

Runoff Hydrograph



Subbasin : {STORM-BASINS}.20

Input Data

Area (ac) 0.19
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.19	-	0.90
Composite Area & Weighted Runoff Coeff.	0.19		0.90

Time of Concentration

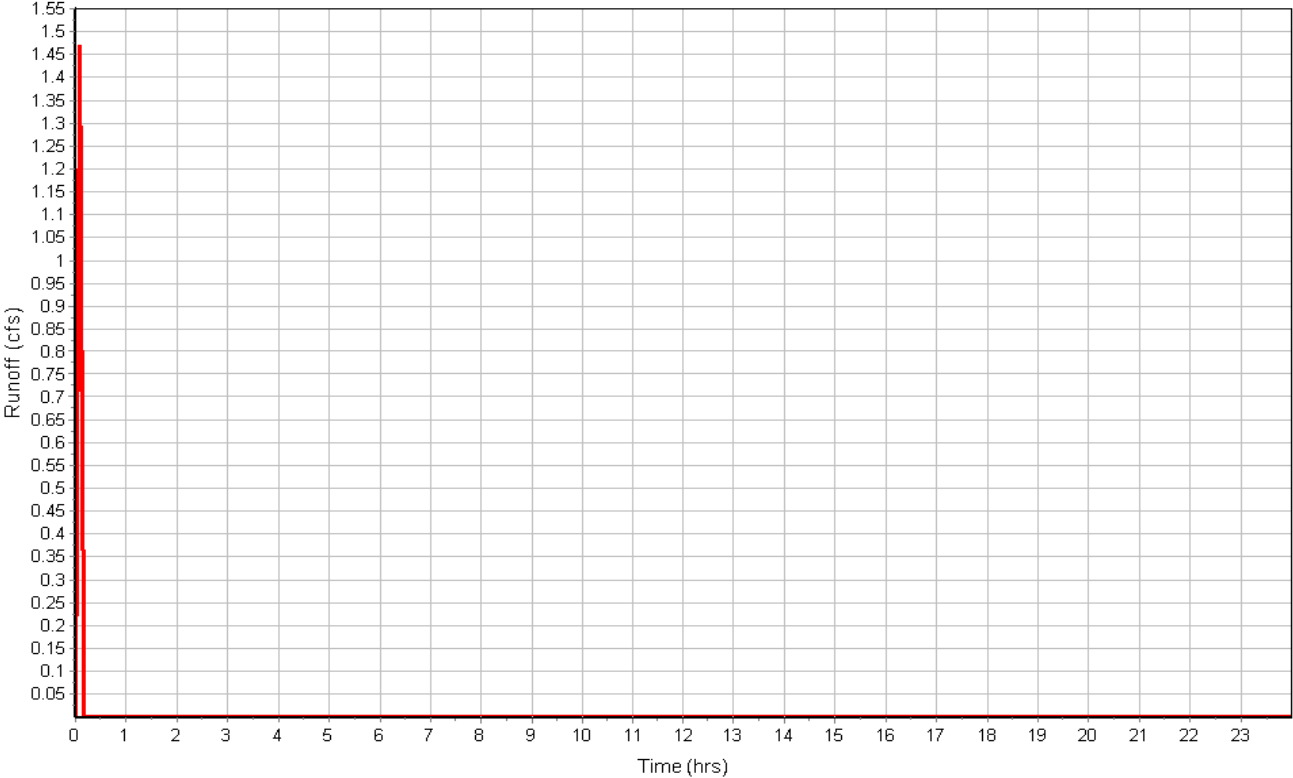
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	319.14	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.85	0.00	0.00
Total TOC (min)1.85			

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 1.47
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:51

Subbasin : {STORM-BASINS}.20

Runoff Hydrograph



Subbasin : {STORM-BASINS}.21

Input Data

Area (ac) 0.22
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.90
Composite Area & Weighted Runoff Coeff.	0.22		0.90

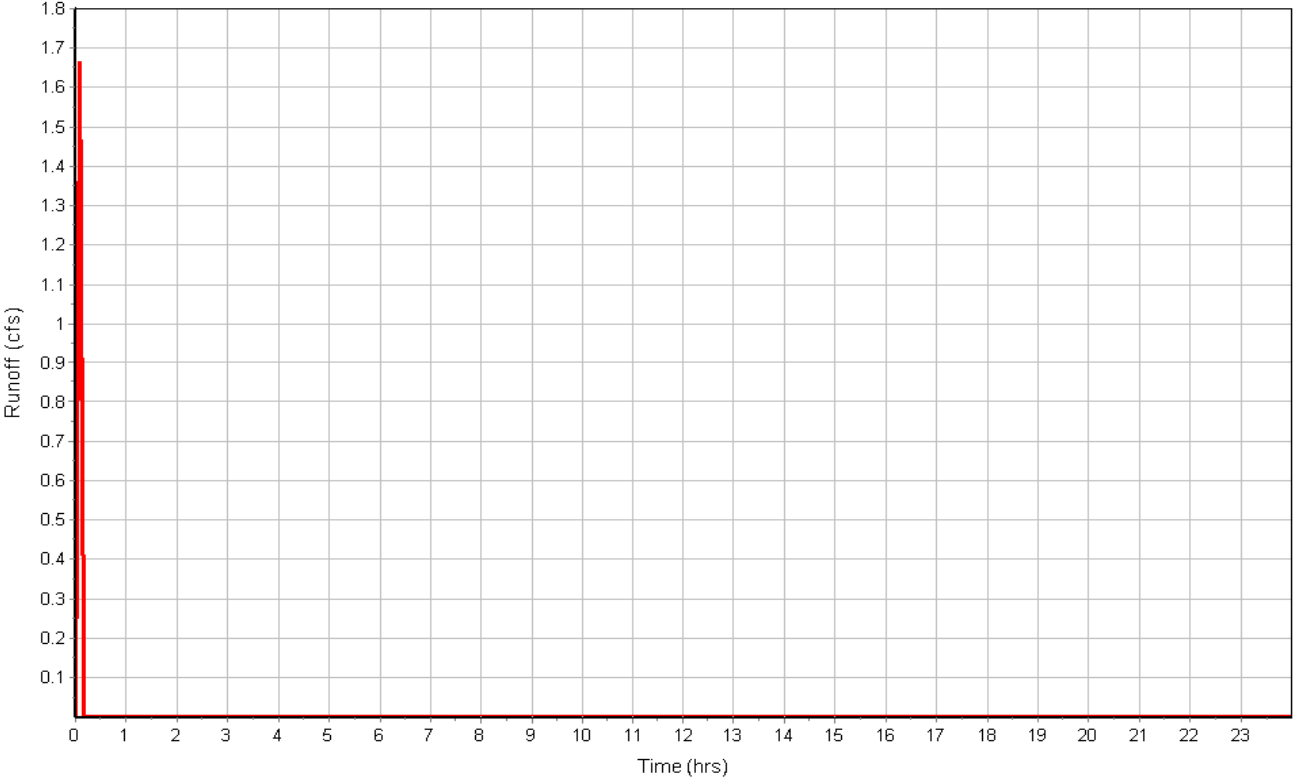
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.70
Total Runoff (in) 0.63
Peak Runoff (cfs) 1.66
Rainfall Intensity 8.400
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.21

Runoff Hydrograph



Subbasin : {STORM-BASINS}.22

Input Data

Area (ac) 0.20
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.20	-	0.90
Composite Area & Weighted Runoff Coeff.	0.20		0.90

Time of Concentration

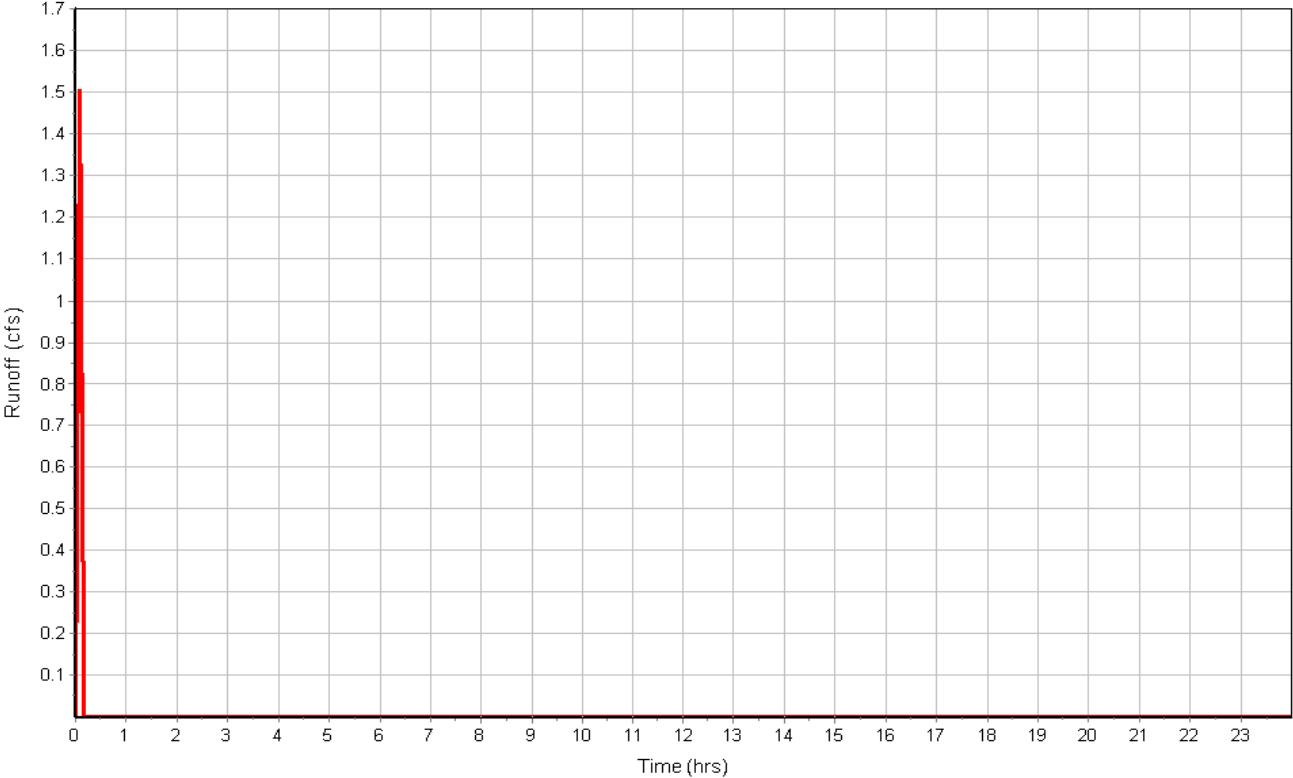
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	364.92	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	1.73	0.00	0.00
Total TOC (min)1.73			

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 1.50
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:44

Subbasin : {STORM-BASINS}.22

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23A

Input Data

Area (ac) 0.88
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.88	-	0.60
Composite Area & Weighted Runoff Coeff.	0.88		0.60

Time of Concentration

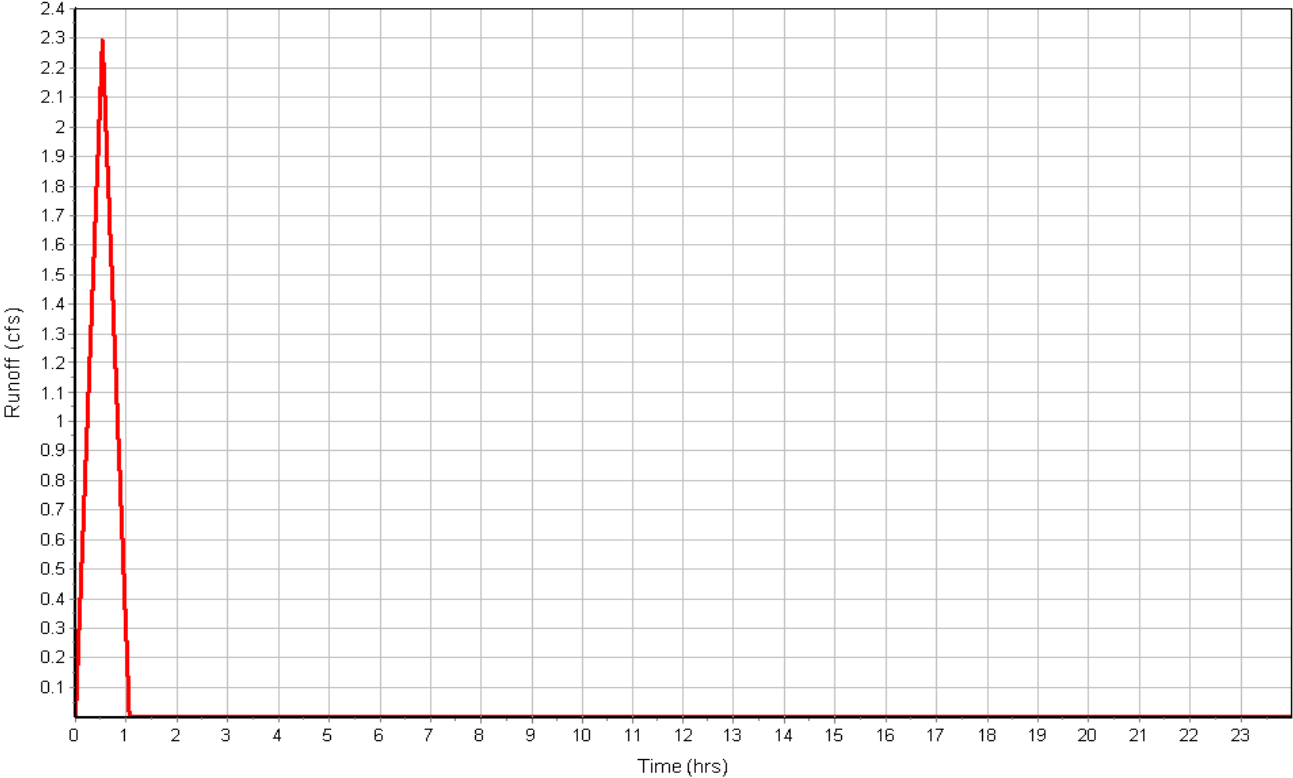
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	476.41	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.25	0.00	0.00
Computed Flow Time (min) :	31.91	0.00	0.00
Total TOC (min)	31.91		

Subbasin Runoff Results

Total Rainfall (in) 2.30
 Total Runoff (in) 1.38
 Peak Runoff (cfs) 2.29
 Rainfall Intensity 4.340
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:31:55

Subbasin : {STORM-BASINS}.23A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23B

Input Data

Area (ac) 0.21
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.21	-	0.90
Composite Area & Weighted Runoff Coeff.	0.21		0.90

Time of Concentration

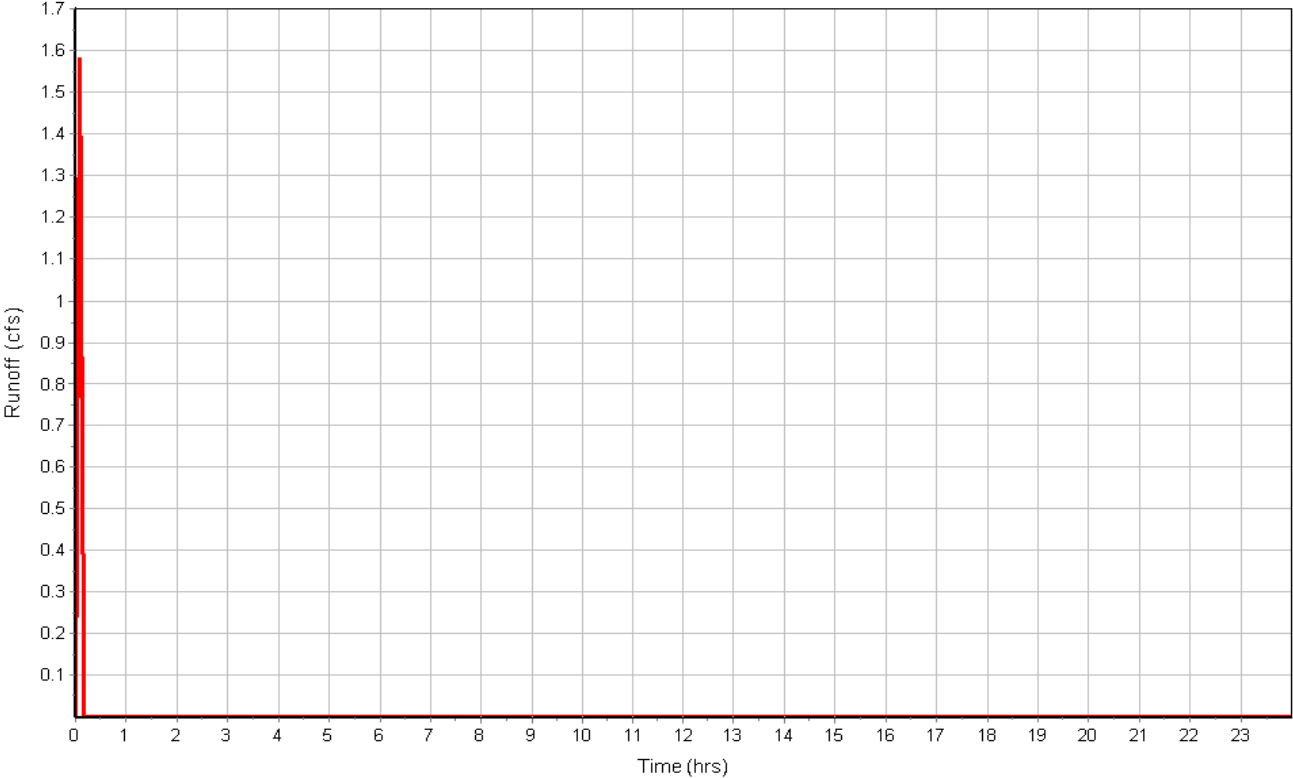
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	294.20	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.71	0.00	0.00
Total TOC (min)	1.71		

Subbasin Runoff Results

Total Rainfall (in) 0.70
Total Runoff (in) 0.63
Peak Runoff (cfs) 1.58
Rainfall Intensity 8.400
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:43

Subbasin : {STORM-BASINS}.23B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.26

Input Data

Area (ac) 1.06
Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.06	-	0.60
Composite Area & Weighted Runoff Coeff.	1.06		0.60

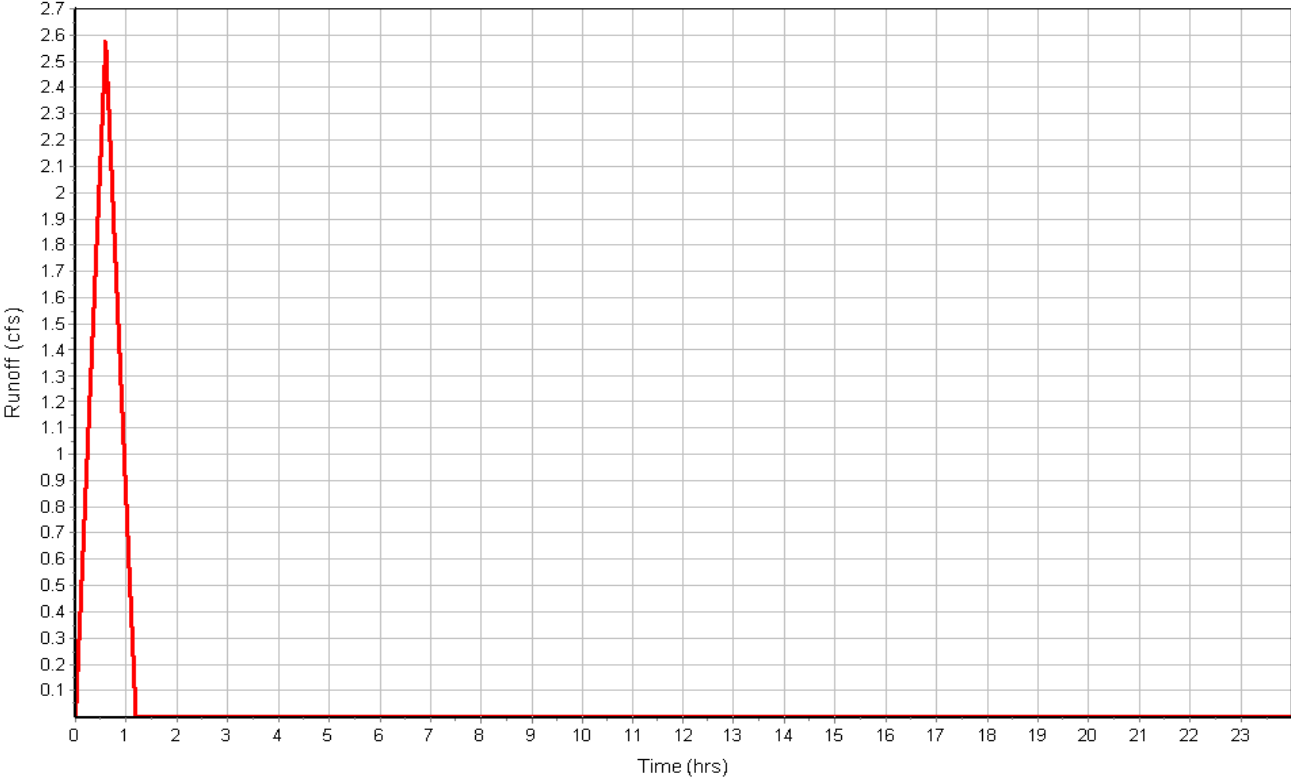
Time of Concentration

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	361.33	0.00	0.00
Slope (%) :	1.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.17	0.00	0.00
Computed Flow Time (min) :	35.74	0.00	0.00
Total TOC (min)	35.74		

Subbasin Runoff Results

Total Rainfall (in) 2.42
Total Runoff (in) 1.45
Peak Runoff (cfs) 2.57
Rainfall Intensity 4.062
Weighted Runoff Coefficient 0.6000
Time of Concentration (days hh:mm:ss) 0 00:35:44

Runoff Hydrograph



Subbasin : {STORM-BASINS}.27

Input Data

Area (ac) 0.58
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.72
Composite Area & Weighted Runoff Coeff.	0.58		0.72

Time of Concentration

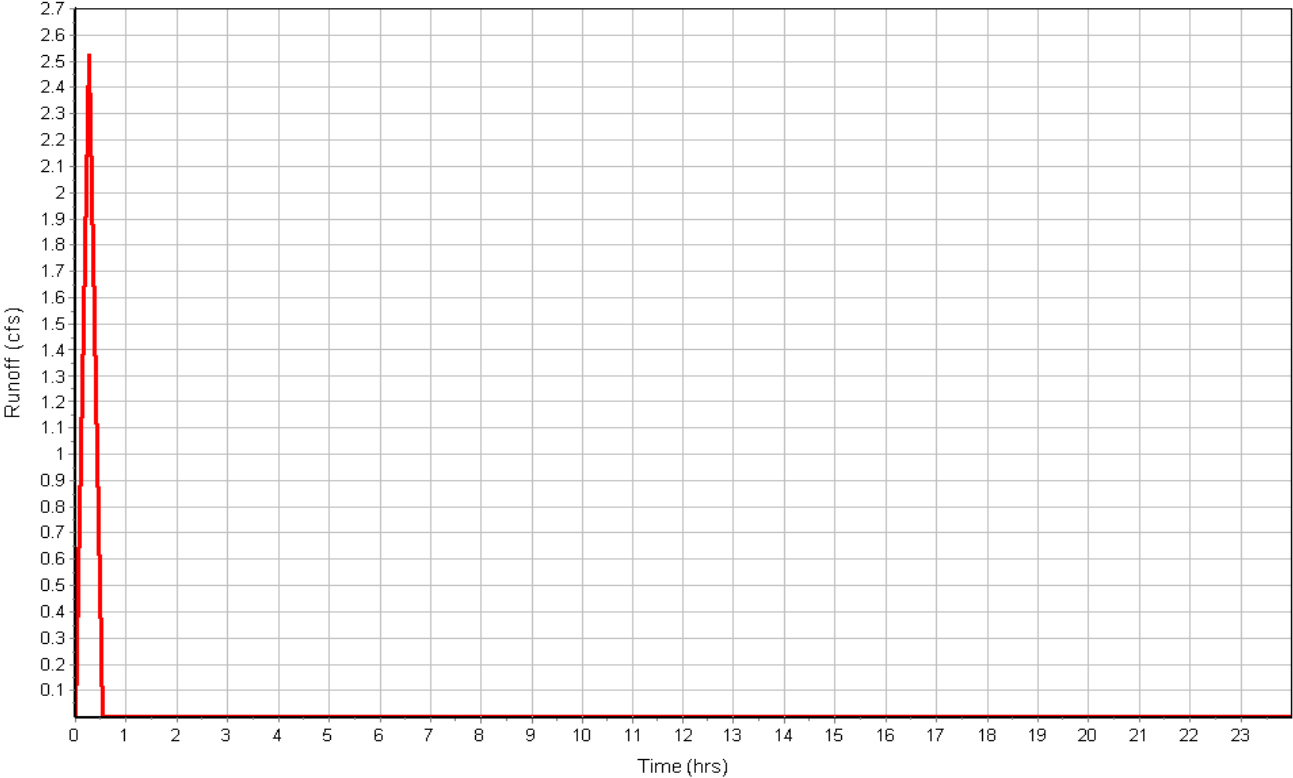
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00
Total TOC (min)	15.94		

Subbasin Runoff Results

Total Rainfall (in) 1.61
 Total Runoff (in) 1.16
 Peak Runoff (cfs) 2.52
 Rainfall Intensity 6.028
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:15:56

Subbasin : {STORM-BASINS}.27

Runoff Hydrograph



Subbasin : {STORM-BASINS}.28

Input Data

Area (ac) 0.22
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.72
Composite Area & Weighted Runoff Coeff.	0.22		0.72

Time of Concentration

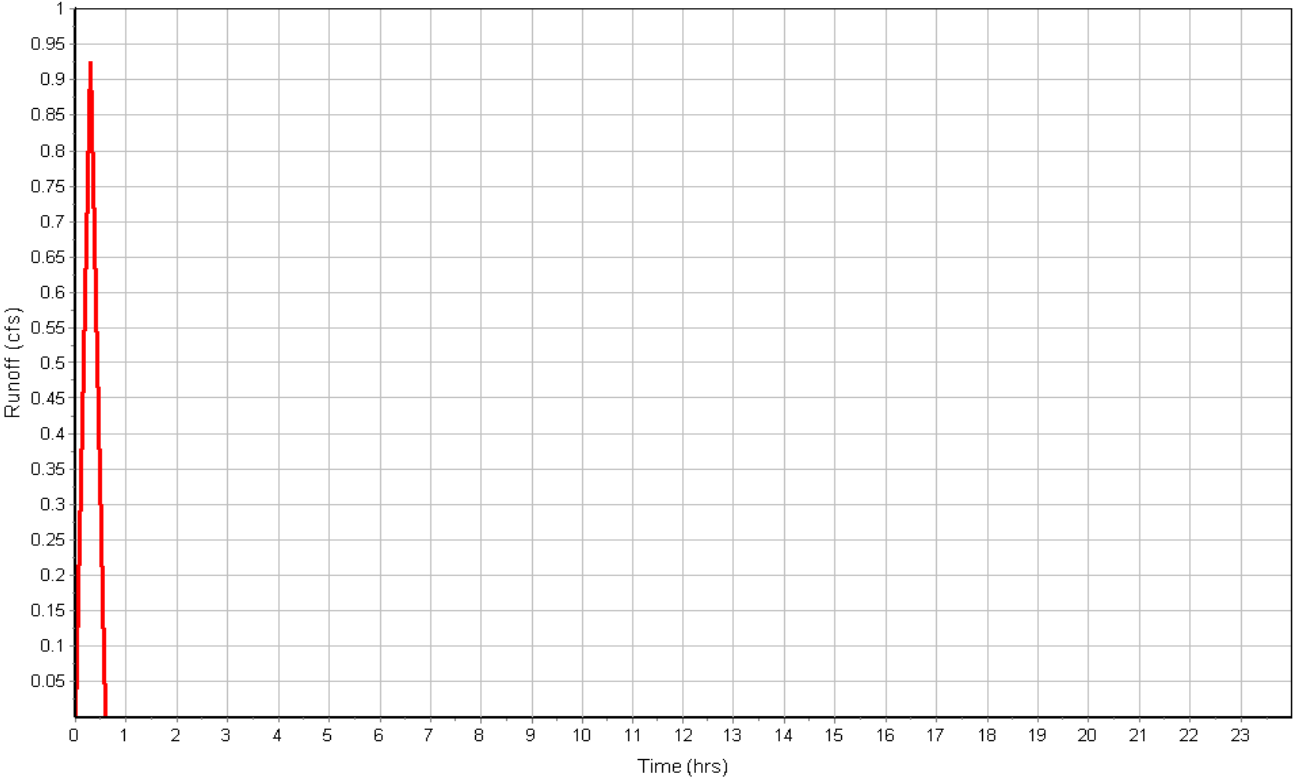
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	185	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.18	0.00	0.00
Computed Flow Time (min) :	17.61	0.00	0.00
Total TOC (min)	17.61		

Subbasin Runoff Results

Total Rainfall (in) 1.70
Total Runoff (in) 1.22
Peak Runoff (cfs) 0.92
Rainfall Intensity 5.757
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:17:37

Subbasin : {STORM-BASINS}.28

Runoff Hydrograph



Subbasin : {STORM-BASINS}.29

Input Data

Area (ac) 0.15
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.15	-	0.90
Composite Area & Weighted Runoff Coeff.	0.15		0.90

Time of Concentration

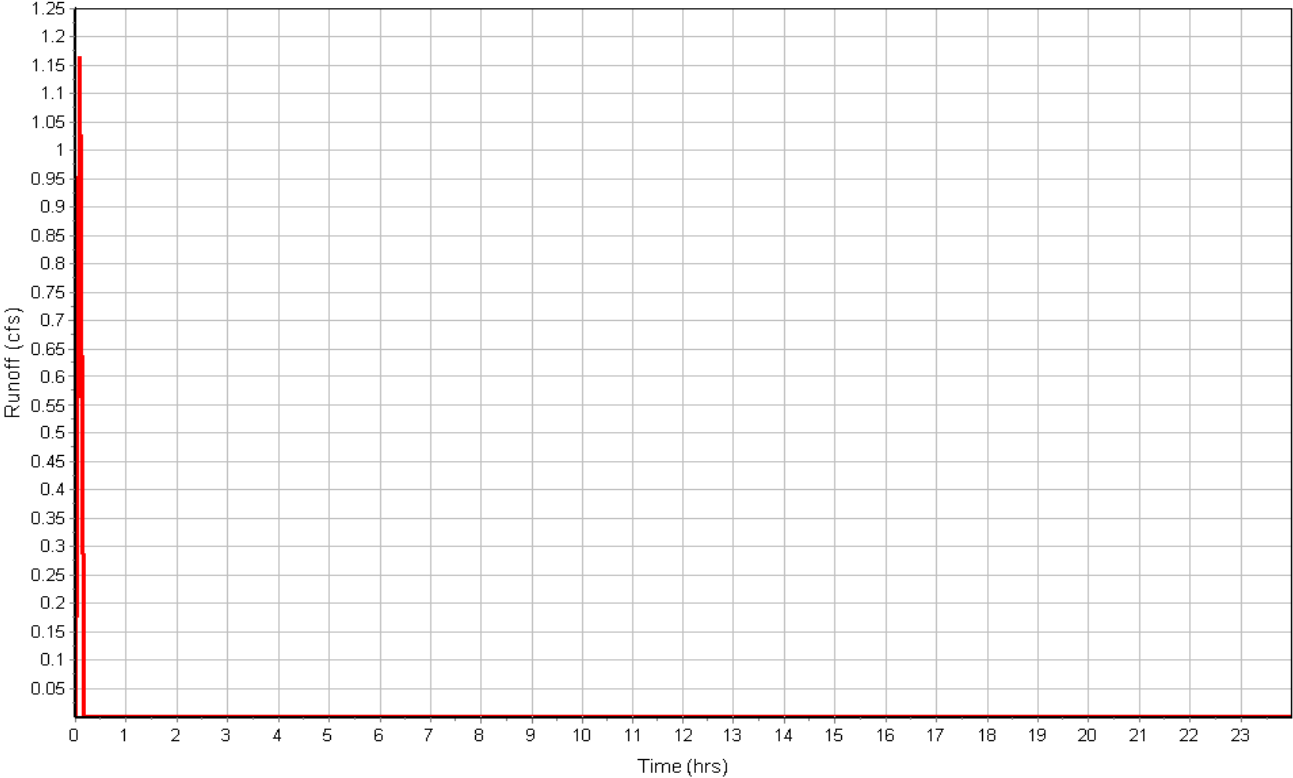
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	223.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.30	0.00	0.00
Total TOC (min)	1.30		

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 1.16
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:18

Subbasin : {STORM-BASINS}.29

Runoff Hydrograph



Subbasin : {STORM-BASINS}.3

Input Data

Area (ac) 1.34
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.20	-	0.60
-	0.13	-	0.90
Composite Area & Weighted Runoff Coeff.	1.33		0.63

Time of Concentration

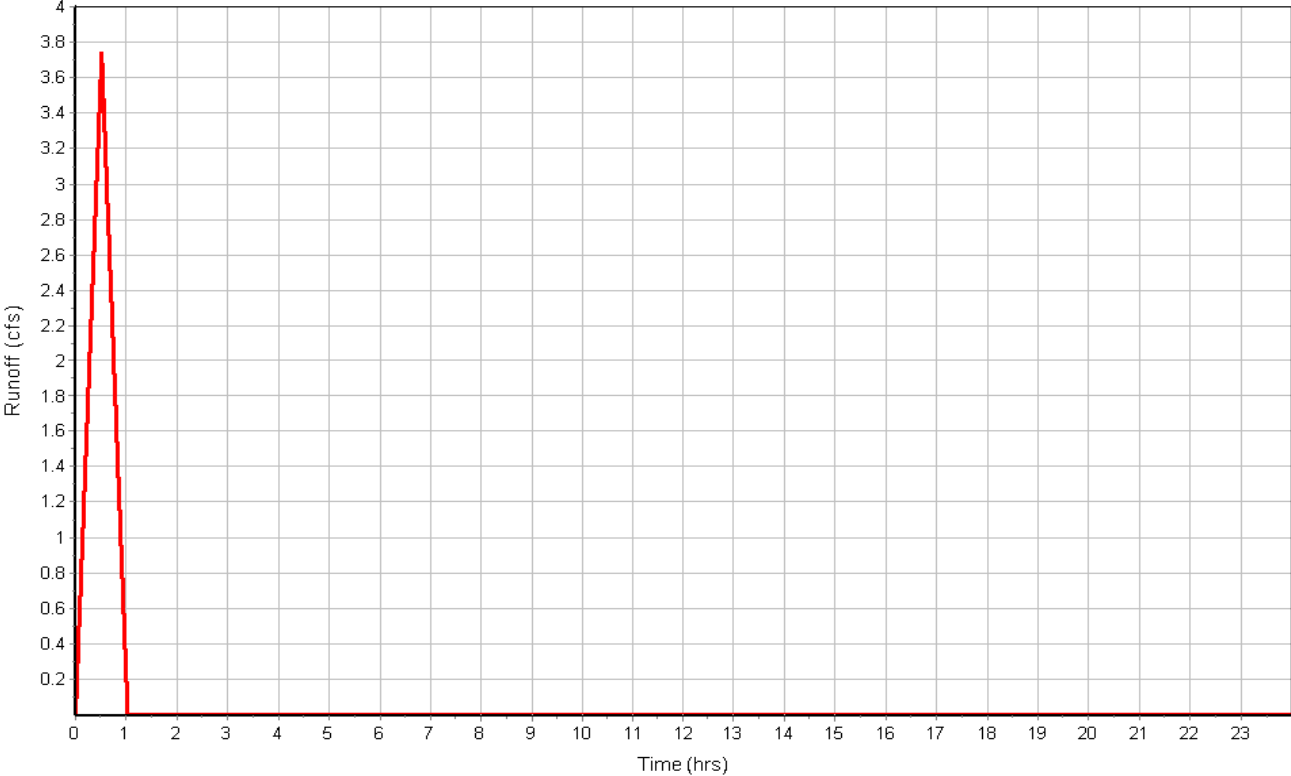
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	545.09	0.00	0.00
Slope (%) :	4.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	30.78	0.00	0.00
Total TOC (min)	30.78		

Subbasin Runoff Results

Total Rainfall (in) 2.28
 Total Runoff (in) 1.44
 Peak Runoff (cfs) 3.73
 Rainfall Intensity 4.433
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:30:47

Subbasin : {STORM-BASINS}.3

Runoff Hydrograph



Subbasin : {STORM-BASINS}.30

Input Data

Area (ac) 0.12
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

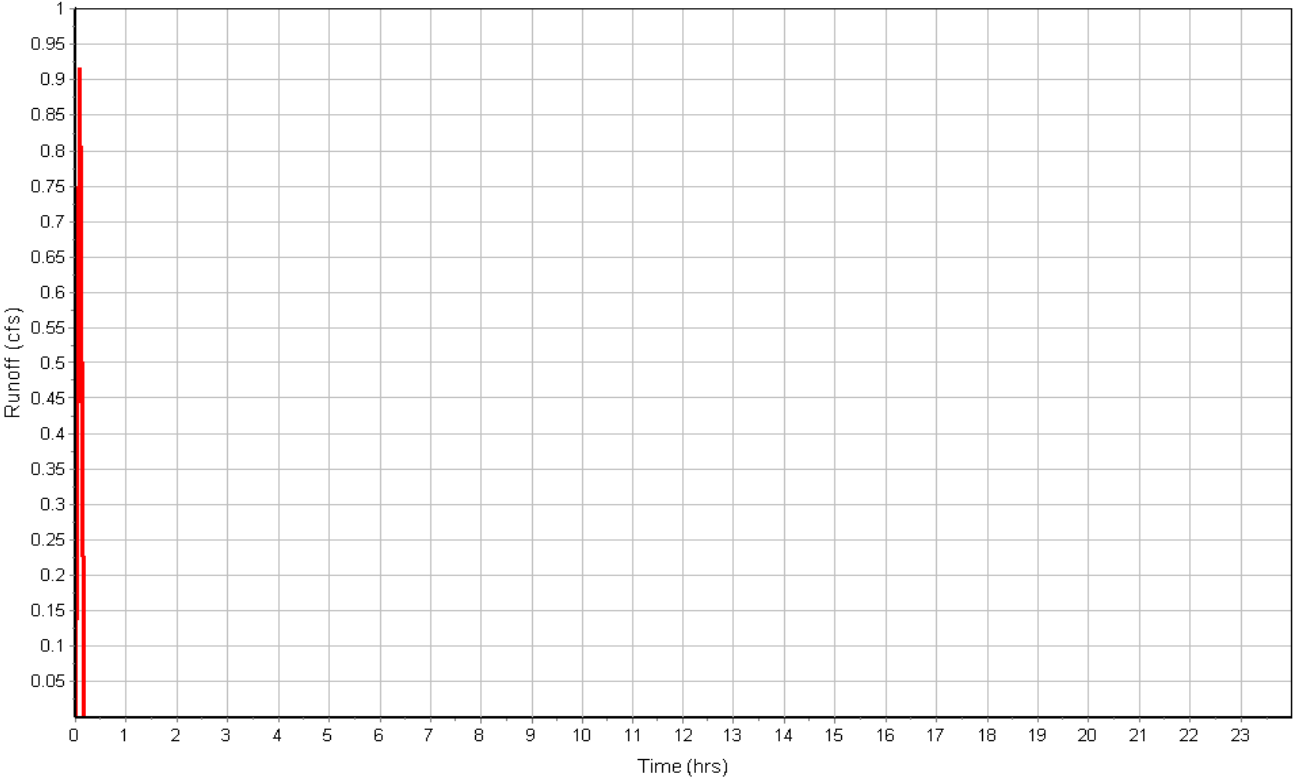
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	222.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.29	0.00	0.00
Total TOC (min)	1.29		

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 0.92
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:17

Subbasin : {STORM-BASINS}.30

Runoff Hydrograph



Subbasin : {STORM-BASINS}.31

Input Data

Area (ac) 0.12
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

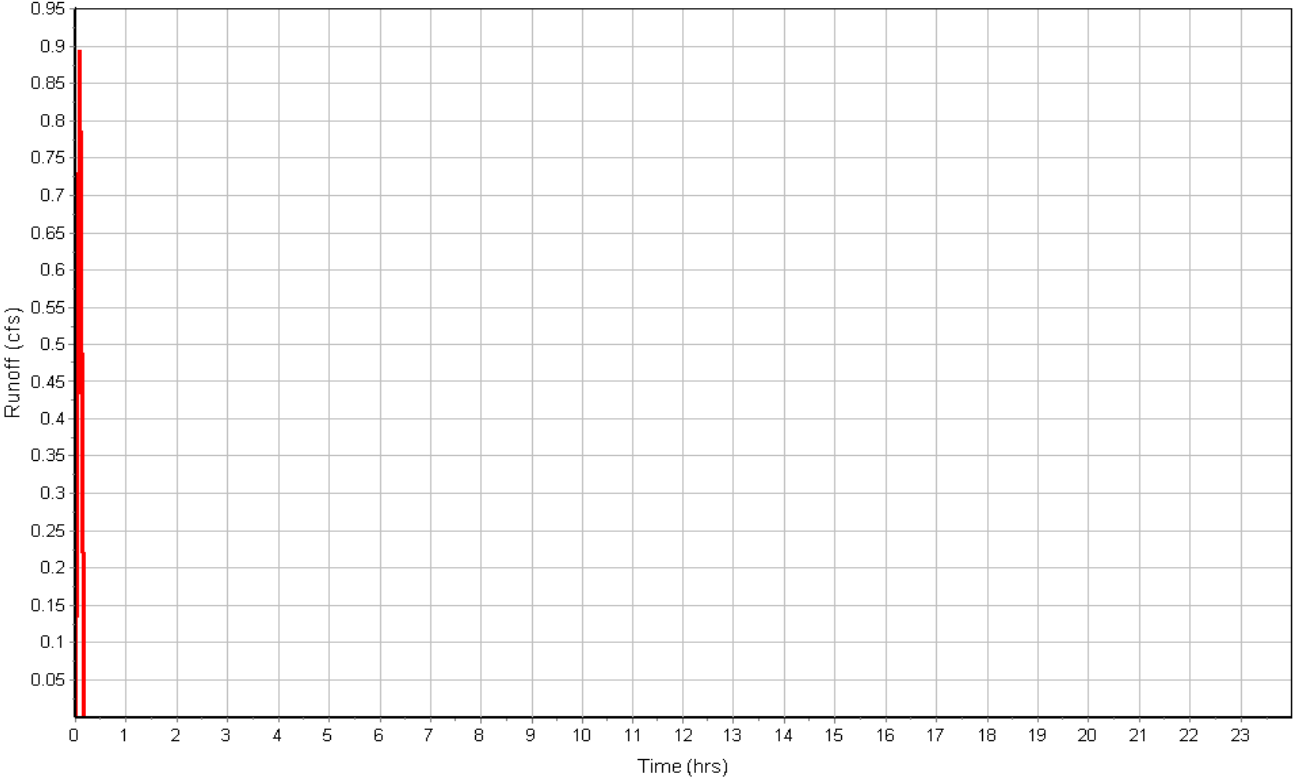
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	258.85	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.50	0.00	0.00
Total TOC (min)	1.50		

Subbasin Runoff Results

Total Rainfall (in) 0.70
Total Runoff (in) 0.63
Peak Runoff (cfs) 0.89
Rainfall Intensity 8.400
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:30

Subbasin : {STORM-BASINS}.31

Runoff Hydrograph



Subbasin : {STORM-BASINS}.4

Input Data

Area (ac) 0.17
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.00	-	0.60
-	0.00	-	0.90
Composite Area & Weighted Runoff Coeff.	0.00		0.75

Time of Concentration

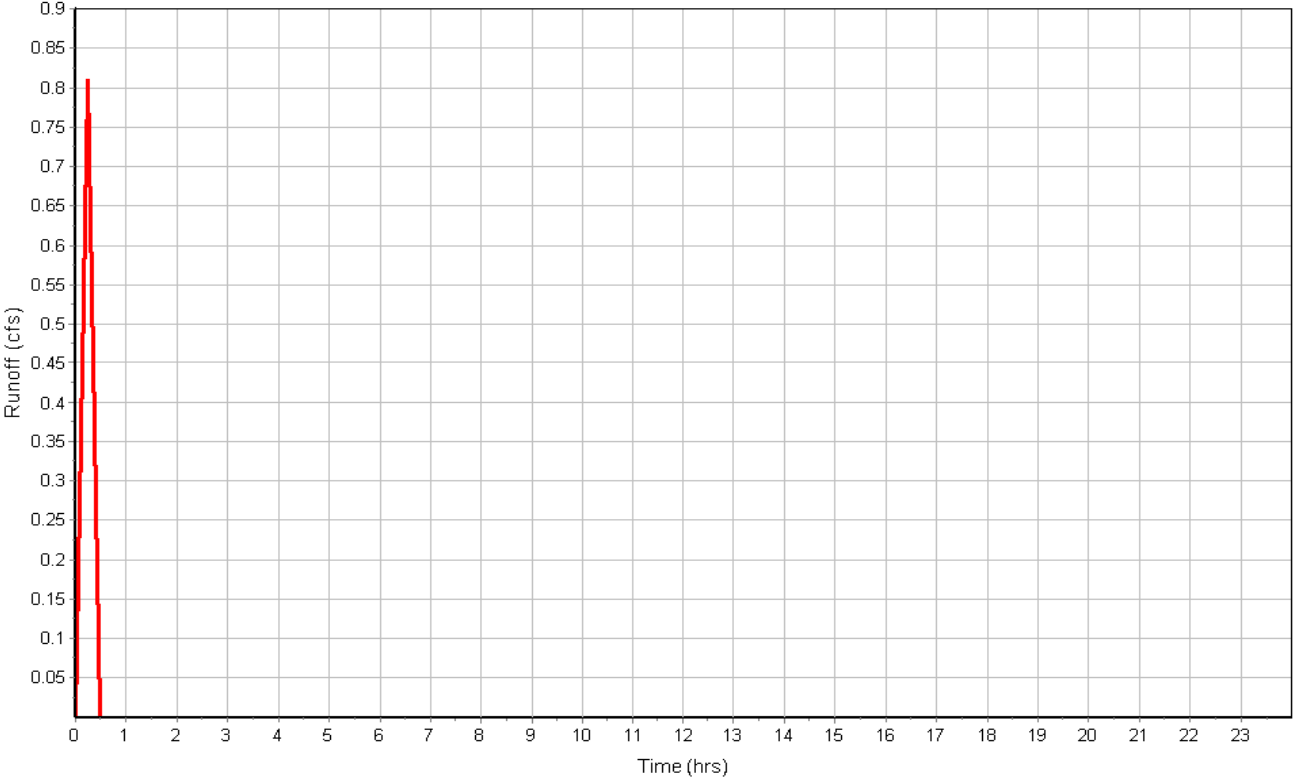
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	211.10	0.00	0.00
Slope (%) :	4.2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.24	0.00	0.00
Computed Flow Time (min) :	14.55	0.00	0.00
Total TOC (min)	14.55		

Subbasin Runoff Results

Total Rainfall (in) 1.52
 Total Runoff (in) 1.14
 Peak Runoff (cfs) 0.81
 Rainfall Intensity 6.270
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:14:33

Subbasin : {STORM-BASINS}.4

Runoff Hydrograph



Subbasin : {STORM-BASINS}.5

Input Data

Area (ac) 0.46
 Weighted Runoff Coefficient 0.6900

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.32	-	0.60
-	0.14	-	0.90
Composite Area & Weighted Runoff Coeff.	0.46		0.69

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	175.47	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	14.35	0.00	0.00

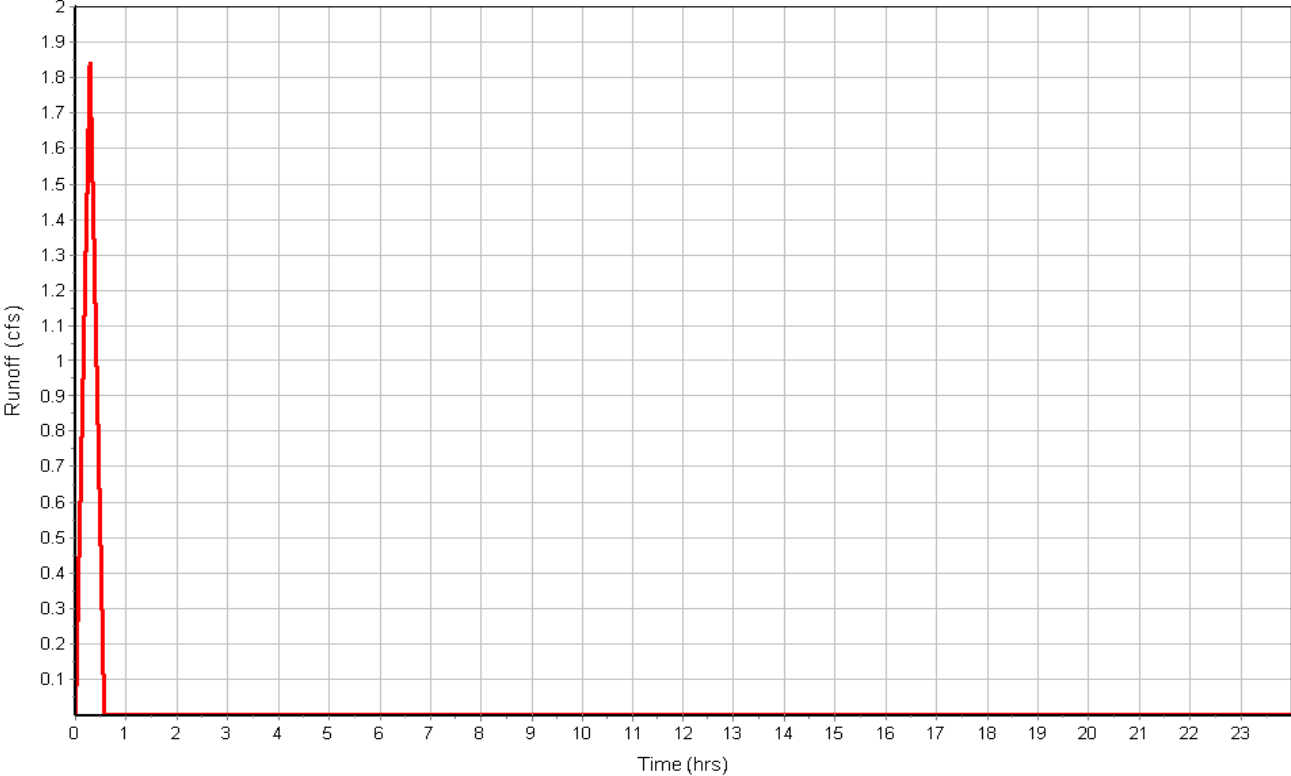
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	576.52	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	2.73	0.00	0.00
Total TOC (min)	17.08		

Subbasin Runoff Results

Total Rainfall (in) 1.65
 Total Runoff (in) 1.14
 Peak Runoff (cfs) 1.84
 Rainfall Intensity 5.839
 Weighted Runoff Coefficient 0.6900
 Time of Concentration (days hh:mm:ss) 0 00:17:05

Subbasin : {STORM-BASINS}.5

Runoff Hydrograph



Subbasin : {STORM-BASINS}.6

Input Data

Area (ac) 1.73
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.73	-	0.60
Composite Area & Weighted Runoff Coeff.	1.73		0.60

Time of Concentration

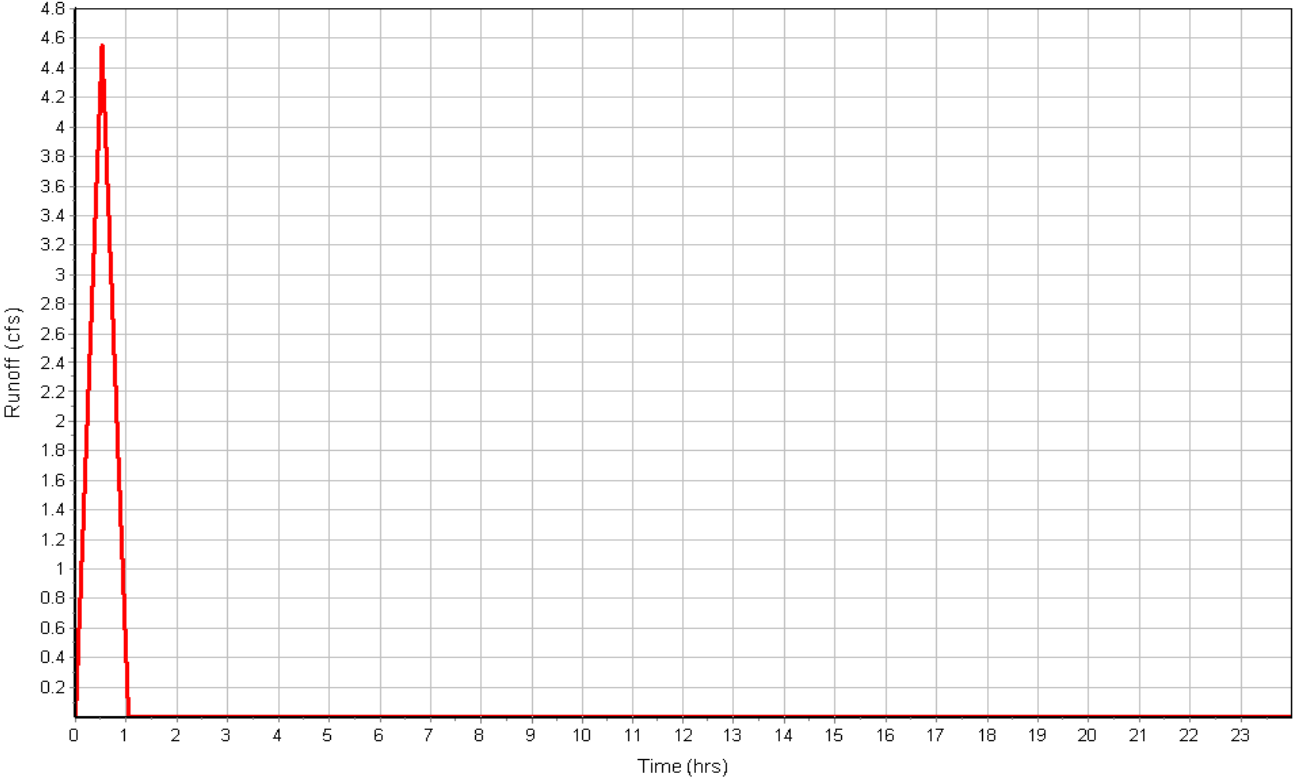
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	501.59	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	31.27	0.00	0.00
Total TOC (min)	31.27		

Subbasin Runoff Results

Total Rainfall (in) 2.29
 Total Runoff (in) 1.38
 Peak Runoff (cfs) 4.55
 Rainfall Intensity 4.392
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:31:16

Subbasin : {STORM-BASINS}.6

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7A

Input Data

Area (ac) 0.38
 Weighted Runoff Coefficient 0.6600

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.30	-	0.60
-	0.08	-	0.90
Composite Area & Weighted Runoff Coeff.	0.38		0.66

Time of Concentration

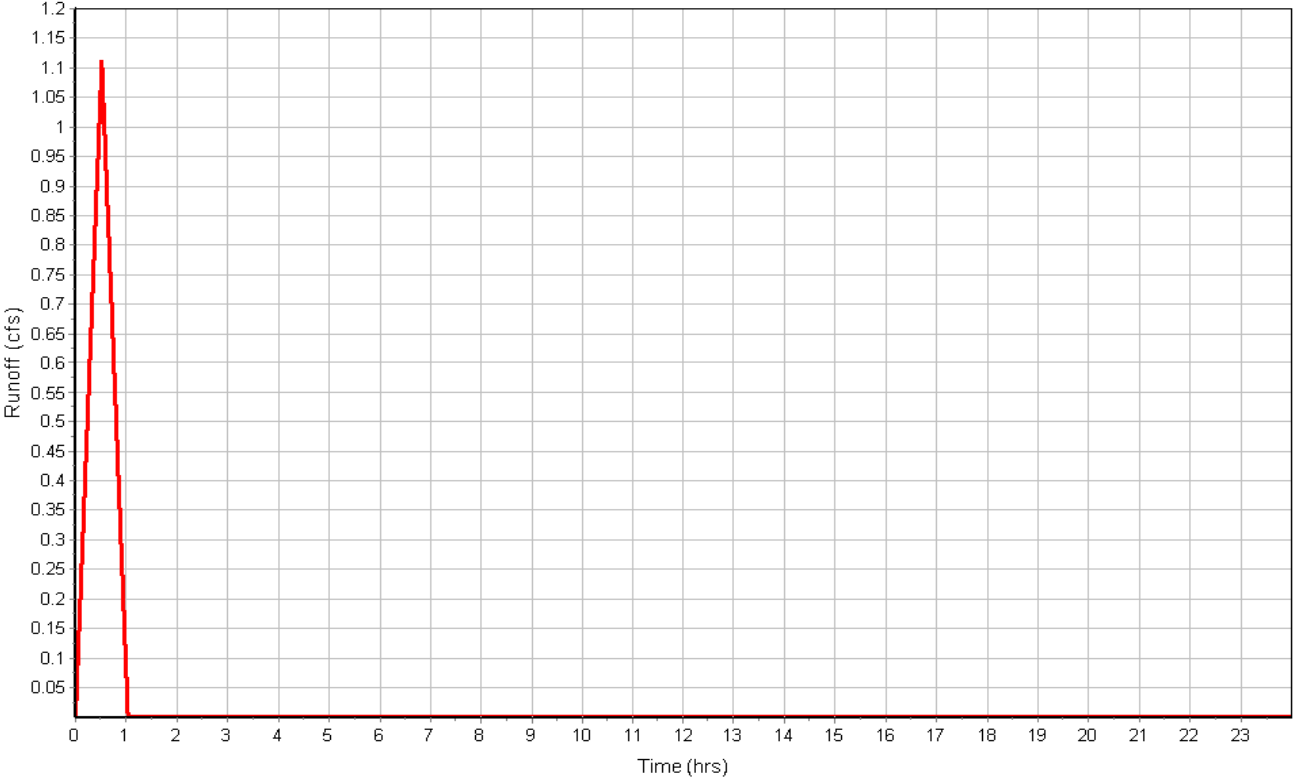
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	419.02	0.00	0.00
Slope (%) :	2.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.23	0.00	0.00
Computed Flow Time (min) :	30.98	0.00	0.00
Total TOC (min)	30.98		

Subbasin Runoff Results

Total Rainfall (in) 2.28
 Total Runoff (in) 1.51
 Peak Runoff (cfs) 1.11
 Rainfall Intensity 4.416
 Weighted Runoff Coefficient 0.6600
 Time of Concentration (days hh:mm:ss) 0 00:30:59

Subbasin : {STORM-BASINS}.7A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7B

Input Data

Area (ac) 0.28
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.17	-	0.60
-	0.11	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.72

Time of Concentration

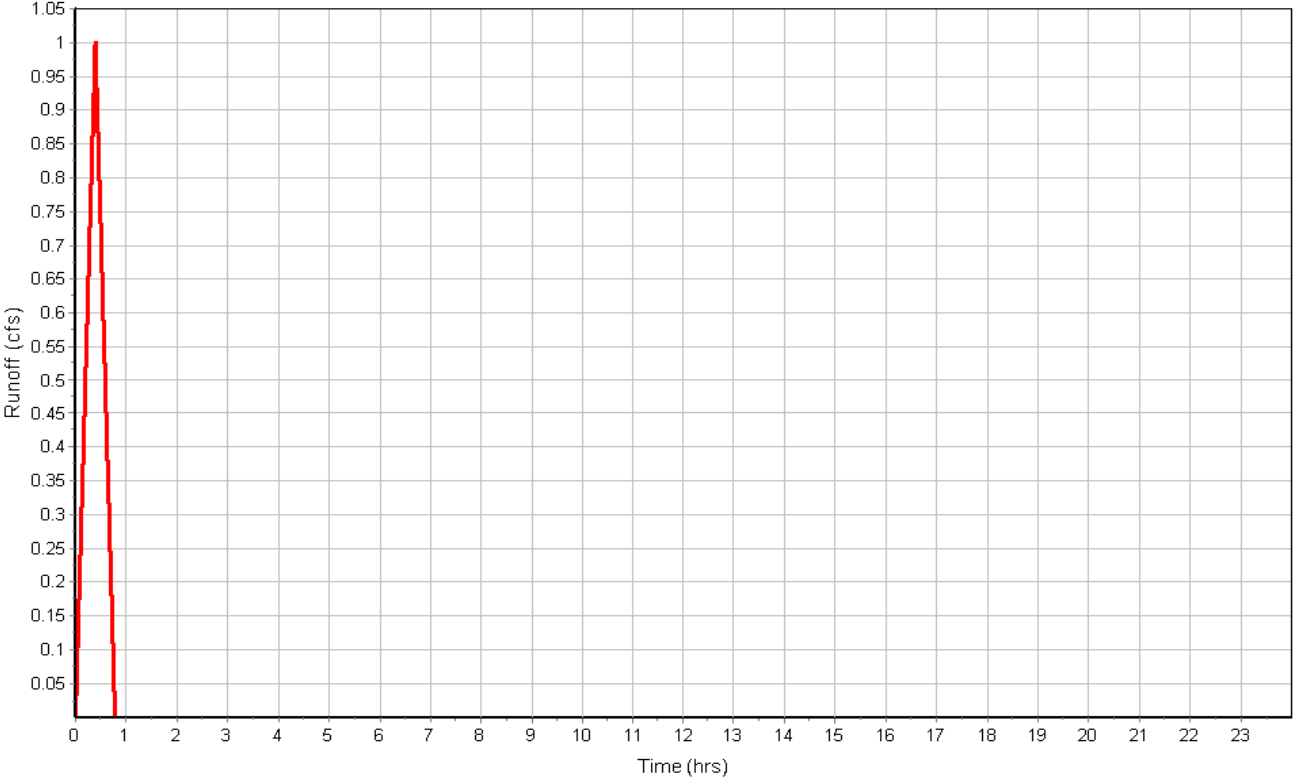
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	282.86	0.00	0.00
Slope (%) :	2.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	23.39	0.00	0.00
Total TOC (min)	23.39		

Subbasin Runoff Results

Total Rainfall (in) 1.96
 Total Runoff (in) 1.41
 Peak Runoff (cfs) 1.00
 Rainfall Intensity 5.049
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:23:23

Subbasin : {STORM-BASINS}.7B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.8

Input Data

Area (ac) 2.66
Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	2.66	-	0.60
Composite Area & Weighted Runoff Coeff.	2.66		0.60

Time of Concentration

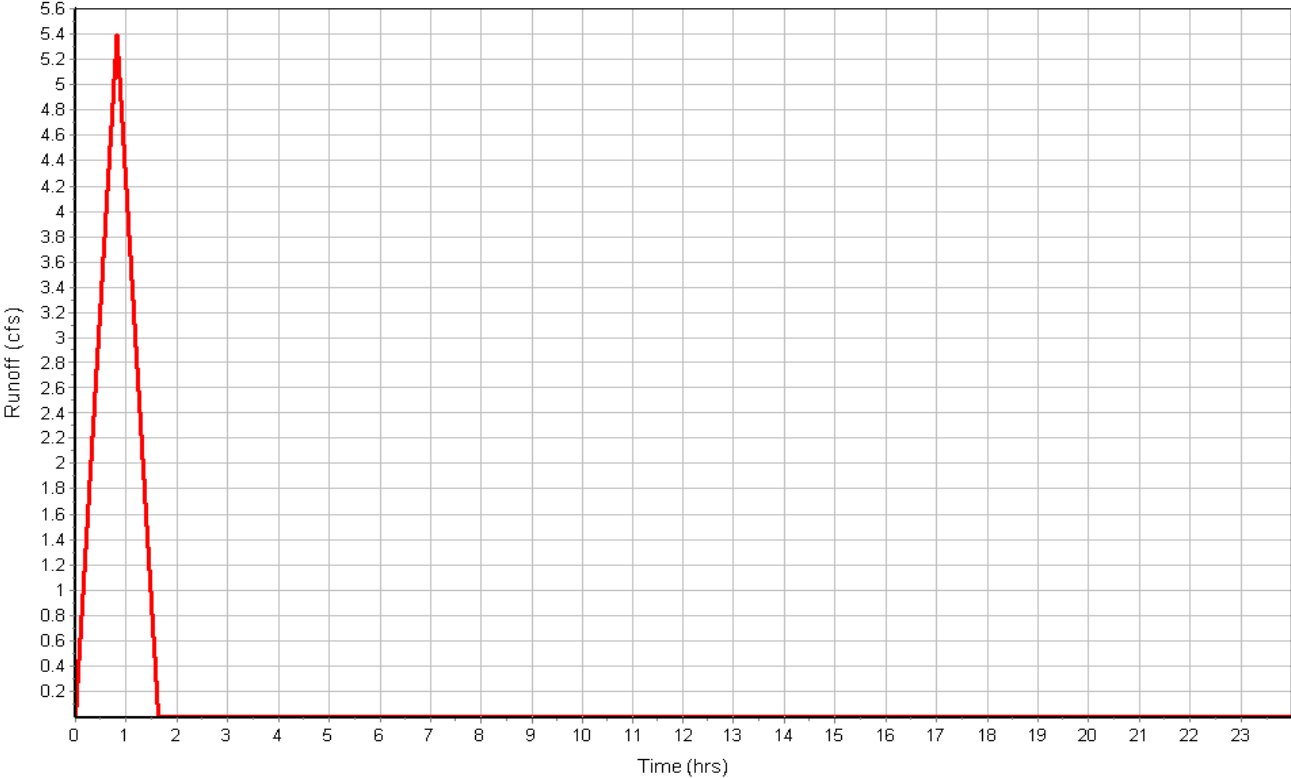
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	801.79	0.00	0.00
Slope (%) :	2.9	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	49.06	0.00	0.00
Total TOC (min)	49.06		

Subbasin Runoff Results

Total Rainfall (in) 2.76
Total Runoff (in) 1.65
Peak Runoff (cfs) 5.39
Rainfall Intensity 3.375
Weighted Runoff Coefficient 0.6000
Time of Concentration (days hh:mm:ss) 0 00:49:04

Subbasin : {STORM-BASINS}.8

Runoff Hydrograph



Subbasin : {STORM-BASINS}.9

Input Data

Area (ac) 0.06
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.06	-	0.90
Composite Area & Weighted Runoff Coeff.	0.06		0.90

Time of Concentration

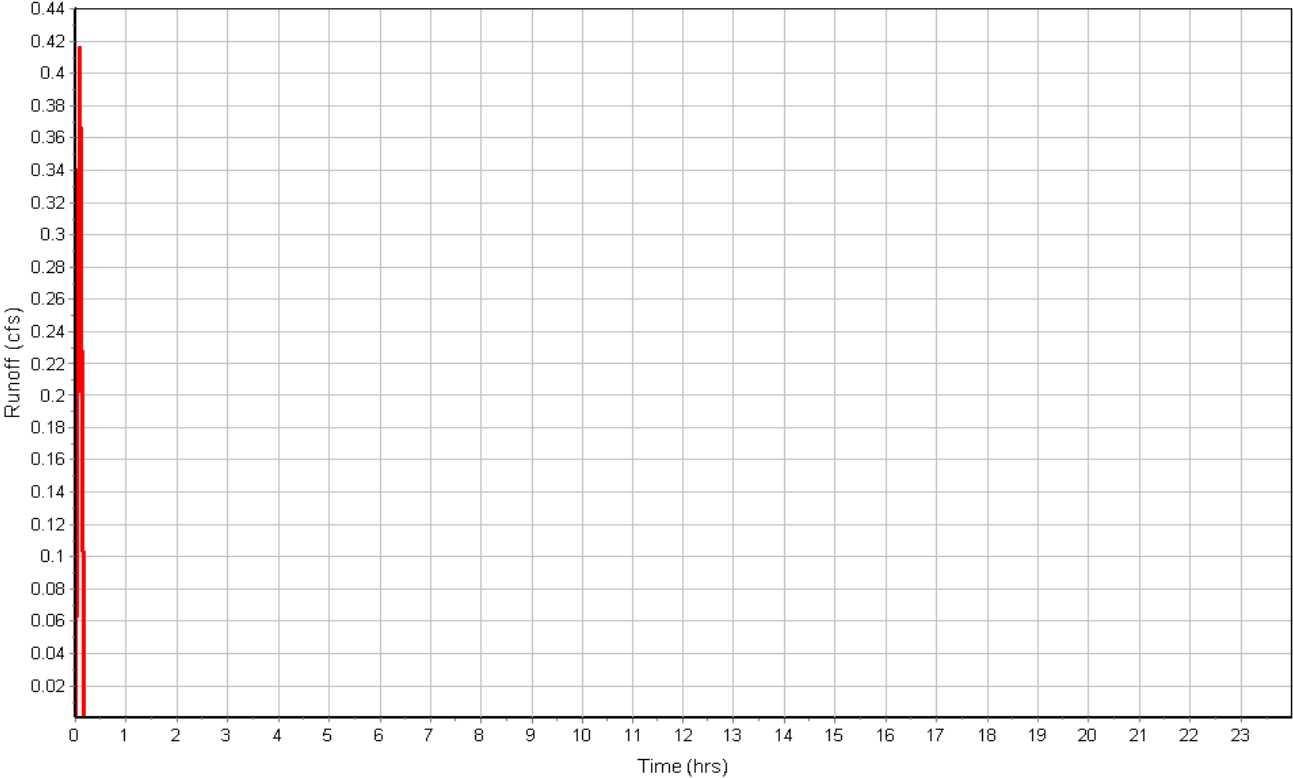
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	93.99	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	0.55	0.00	0.00
Total TOC (min)0.55			

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 0.42
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:00:33

Subbasin : {STORM-BASINS}.9

Runoff Hydrograph



Junction Input

SN Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft ²)	Minimum Pipe Cover (in)
1 CB-I1	476.43	480.49	4.06	476.43	0.00	480.49	0.00	0.00	0.00
2 CONNECT-G	483.22	485.22	2.00	483.22	0.00	485.22	-0.01	0.00	0.00
3 CONNECT-I	483.38	489.38	6.00	483.38	0.00	489.38	0.00	0.00	0.00
4 FES-H2	482.37	485.12	2.75	482.37	0.00	485.12	0.00	0.00	0.00
5 Jun-01	473.29	477.00	3.71	473.29	0.00	477.00	0.00	0.00	0.00

Junction Results

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 CB-I1	9.48	0.00	477.54	1.11	0.00	2.95	476.47	0.04	0 00:40	0 00:00	0.00	0.00
2 CONNECT-G	7.23	0.00	484.12	0.90	0.00	1.10	483.25	0.03	0 00:31	0 00:00	0.00	0.00
3 CONNECT-I	4.59	0.00	483.91	0.53	0.00	5.47	483.39	0.01	0 00:05	0 00:00	0.00	0.00
4 FES-H2	17.66	0.00	483.37	1.00	0.00	1.75	482.39	0.02	0 00:06	0 00:00	0.00	0.00
5 Jun-01	22.27	0.00	474.90	1.61	0.00	2.10	473.41	0.12	0 00:52	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	Gutter-05	200.35	495.00	4.05	487.00	2.90	8.00	3.9900	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Gutter-06	200.99	495.00	4.37	487.00	3.22	8.00	3.9800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Gutter-07	239.28	487.00	3.22	485.61	3.25	1.39	0.5800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Gutter-08	240.40	485.61	3.25	480.15	3.25	5.46	2.2700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Gutter-09	57.48	480.15	3.25	478.65	3.80	1.50	2.6100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Gutter-10	192.99	480.66	4.57	478.79	3.94	1.87	0.9700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Gutter-12	213.95	483.97	4.97	479.50	2.59	4.47	2.0900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Gutter-13	213.94	491.00	4.00	483.97	4.97	7.03	3.2900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Gutter-14	201.82	500.50	3.77	491.00	4.00	9.50	4.7100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Gutter-15	201.21	500.50	2.90	491.00	3.43	9.50	4.7200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Gutter-16	425.27	491.00	3.43	482.00	3.93	9.00	2.1200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Gutter-17	292.35	485.12	1.74	480.66	4.57	4.46	1.5200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Gutter-23	587.46	487.00	2.90	479.00	4.50	8.00	1.3600	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Gutter-26	57.06	490.37	6.49	485.12	1.74	5.25	9.2000	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 Gutter-05	0.38	0 00:16	9.52	0.04	3.41	0.98	0.15	0.29	0.00		
2 Gutter-06	1.11	0 00:18	9.50	0.12	3.90	0.86	0.22	0.44	0.00		
3 Gutter-07	0.96	0 00:33	3.83	0.25	1.79	2.23	0.29	0.58	0.00		
4 Gutter-08	0.00	0 00:38	7.18	0.00	0.28	14.31	0.01	0.02	0.00		
5 Gutter-09	0.00	0 00:00	7.33	0.00	0.00		0.00	0.00	0.00		
6 Gutter-10	0.16	0 00:06	4.69	0.03	2.42	1.33	0.13	0.26	0.00		
7 Gutter-12	0.06	0 00:30	6.51	0.01	1.81	1.97	0.08	0.17	0.00		
8 Gutter-13	0.00	0 00:00	9.03	0.00	0.00		0.00	0.00	0.00		
9 Gutter-14	0.10	0 00:06	10.29	0.01	3.76	0.89	0.09	0.17	0.00		
10 Gutter-15	0.31	0 00:06	10.48	0.03	4.50	0.75	0.13	0.26	0.00		
11 Gutter-16	0.00	0 00:00	7.04	0.00	0.00		0.00	0.00	0.00		
12 Gutter-17	0.17	0 00:20	5.88	0.03	2.14	2.28	0.13	0.25	0.00		
13 Gutter-23	0.39	0 00:37	5.55	0.07	2.61	3.75	0.18	0.35	0.00		
14 Gutter-26	0.91	0 00:16	14.45	0.06	3.39	0.28	0.18	0.35	0.00		

Pipe Input

SN Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Pipe Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1 ST-C1	92.51	483.78	0.00	483.22	0.00	0.56	0.6000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
2 ST-C2	200.00	490.63	0.00	483.88	0.10	6.75	3.3800	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3 ST-C3	32.02	490.95	0.00	490.63	0.00	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4 ST-CS1	24.64	473.29	0.00	473.16	0.00	0.13	0.5300	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5 ST-D1	32.02	484.10	0.00	483.88	0.10	0.22	0.6900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6 ST-E1 (2)	133.90	487.00	0.00	483.38	0.00	3.62	2.7000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
7 ST-E2 (EXIST)	200.00	496.73	0.00	487.10	0.10	9.63	4.8100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8 ST-E3 (EXIST)	32.02	497.60	0.00	496.83	0.10	0.77	2.4000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9 ST-F1 (EXIST)	32.02	487.57	0.00	487.10	0.10	0.47	1.4600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10 ST-G1	72.10	474.50	0.00	473.92	0.63	0.58	0.8000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11 ST-G2	31.99	474.85	0.00	474.50	0.00	0.35	1.0900	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12 ST-G3	49.09	476.90	0.00	474.95	0.10	1.95	3.9700	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13 ST-G4	238.61	482.36	0.00	476.90	0.00	5.46	2.2900	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14 ST-G5	145.74	483.22	0.00	482.35	-0.01	0.88	0.6000	CIRCULAR	24.000	24.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
15 ST-H1	190.63	476.09	0.00	474.95	0.10	1.14	0.6000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
16 ST-H2	252.90	482.37	0.00	476.19	0.10	6.18	2.4400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17 ST-H2A	37.10	483.38	0.00	482.37	0.00	1.01	2.7200	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18 ST-H3	48.08	483.88	0.00	483.38	0.00	0.50	1.0400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19 ST-H5	378.49	485.87	0.00	483.98	0.10	1.89	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20 ST-H6	32.00	488.21	0.00	487.89	2.02	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21 ST-I1	48.08	476.43	0.00	476.19	0.10	0.24	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22 ST-I2	95.00	476.91	0.00	476.43	0.00	0.48	0.5100	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23 ST-I3	212.56	479.00	0.00	477.00	0.09	2.00	0.9400	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24 ST-I4	78.66	483.38	0.00	481.27	2.27	2.11	2.6900	CIRCULAR	18.000	18.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
25 ST-K1	32.05	477.32	-0.75	477.00	0.09	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 ST-C1	7.23	0 00:31	17.52	0.41	5.32	0.29	0.90	0.45	0.00		Calculated
2 ST-C2	1.05	0 00:17	19.30	0.05	7.08	0.47	0.24	0.16	0.00		Calculated
3 ST-C3	0.41	0 00:14	10.50	0.04	2.87	0.19	0.20	0.13	0.00		Calculated
4 ST-CS1	22.27	0 00:52	29.79	0.75	6.66	0.06	1.61	0.64	0.00		Calculated
5 ST-D1	3.25	0 00:31	8.71	0.37	4.57	0.12	0.63	0.42	0.00		Calculated
6 ST-E1 (2)	4.59	0 00:05	17.26	0.27	8.29	0.27	0.53	0.35	0.00		Calculated
7 ST-E2 (EXIST)	2.33	0 00:05	23.05	0.10	8.44	0.39	0.32	0.21	0.00		Calculated
8 ST-E3 (EXIST)	1.30	0 00:05	16.27	0.08	6.39	0.08	0.29	0.19	0.00		Calculated
9 ST-F1 (EXIST)	1.41	0 00:05	12.70	0.11	4.74	0.11	0.34	0.22	0.00		Calculated
10 ST-G1	32.61	0 00:06	36.79	0.89	8.48	0.14	1.83	0.73	0.00		Calculated
11 ST-G2	30.37	0 00:06	42.90	0.71	9.48	0.06	1.55	0.62	0.00		Calculated
12 ST-G3	9.82	0 00:31	45.08	0.22	11.48	0.07	0.63	0.32	0.00		Calculated
13 ST-G4	9.18	0 00:32	34.22	0.27	9.24	0.43	0.71	0.35	0.00		Calculated
14 ST-G5	7.23	0 00:31	17.44	0.41	5.30	0.46	0.90	0.45	0.00		Calculated
15 ST-H1	26.98	0 00:06	31.72	0.85	7.36	0.43	1.77	0.71	0.00		Calculated
16 ST-H2	17.56	0 00:06	35.36	0.50	11.33	0.37	1.00	0.50	0.00		Calculated
17 ST-H2A	17.66	0 00:06	37.32	0.47	11.72	0.05	0.97	0.48	0.00		Calculated
18 ST-H3	16.58	0 00:05	23.11	0.72	8.01	0.10	1.25	0.63	0.00		Calculated
19 ST-H5	15.05	0 00:05	16.01	0.94	6.16	1.02	1.52	0.76	0.00		Calculated
20 ST-H6	4.59	0 00:35	10.50	0.44	5.75	0.09	0.69	0.46	0.00		Calculated
21 ST-I1	9.48	0 00:40	16.00	0.59	5.31	0.15	1.11	0.55	0.00		Calculated
22 ST-I2	9.48	0 00:40	16.08	0.59	5.33	0.30	1.10	0.55	0.00		Calculated
23 ST-I3	5.05	0 00:06	10.19	0.50	5.83	0.61	0.74	0.50	0.00		Calculated
24 ST-I4	4.58	0 00:05	17.22	0.27	8.25	0.16	0.53	0.35	0.00		Calculated
25 ST-K1	8.04	0 00:40	19.20	0.42	10.39	0.05	0.68	0.45	0.00		Calculated

Inlet Input

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft ²)	Grate Clogging Factor (%)
1 CB-C1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	483.78	487.16	3.38	483.78	0.00	N/A	0.00
2 CB-C2 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	490.63	495.14	4.51	490.63	0.00	N/A	0.00
3 CB-C3 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	490.95	495.16	4.21	490.95	0.00	N/A	0.00
4 CB-D1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	484.10	487.17	3.07	484.10	0.00	N/A	0.00
5 CB-E1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	487.00	491.64	4.64	487.00	0.00	N/A	0.00
6 CB-E2 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	496.73	501.05	4.32	496.73	0.00	N/A	0.00
7 CB-E3 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	497.60	501.00	3.41	497.60	0.00	N/A	0.00
8 CB-F1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	487.57	491.28	3.71	487.57	0.00	N/A	0.00
9 CB-G2	FHWA HEC-22	GENERIC	N/A	1	474.50	479.18	4.68	474.50	0.00	0.00	0.00
10 CB-G3	FHWA HEC-22	GENERIC	N/A	1	474.85	478.79	3.94	474.85	0.00	0.00	0.00
11 CB-G4	FHWA HEC-22	GENERIC	N/A	1	476.90	480.15	3.25	476.90	0.00	N/A	0.00
12 CB-G5	FHWA HEC-22	GENERIC	N/A	1	482.36	485.61	3.25	482.36	0.00	N/A	0.00
13 CB-H1	FHWA HEC-22	GENERIC	N/A	1	476.09	480.66	4.57	476.09	0.00	N/A	0.00
14 CB-H2	FHWA HEC-22	GENERIC	N/A	1	483.38	485.12	1.74	483.38	0.00	N/A	0.00
15 CB-H3	FHWA HEC-22	GENERIC	N/A	1	483.88	490.37	6.49	483.88	0.00	N/A	0.00
16 CB-H5	FHWA HEC-22	GENERIC	N/A	1	485.87	488.55	2.68	485.87	0.00	0.00	0.00
17 CB-H6	FHWA HEC-22	GENERIC	N/A	1	488.21	488.55	0.35	488.21	0.00	0.00	0.00
18 CB-I2	FHWA HEC-22	GENERIC	N/A	1	476.91	479.97	3.06	476.91	0.00	0.00	0.00
19 CB-I3	FHWA HEC-22	GENERIC	N/A	1	479.00	483.97	4.97	479.00	0.00	N/A	0.00
20 CB-K1	FHWA HEC-22	GENERIC	N/A	1	478.07	482.00	3.93	478.07	0.00	0.00	0.00

Roadway & Gutter Input

SN Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1 CB-C1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
2 CB-C2 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
3 CB-C3 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
4 CB-D1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
5 CB-E1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
6 CB-E2 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
7 CB-E3 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
8 CB-F1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
9 CB-G2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
10 CB-G3	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
11 CB-G4	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
12 CB-G5	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
13 CB-H1	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
14 CB-H2	0.0100	0.0200	0.0160	0.0620	1.50	0.1969	12.00
15 CB-H3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
16 CB-H5	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
17 CB-H6	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
18 CB-I2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
19 CB-I3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
20 CB-K1	N/A	0.0200	0.0130	0.0833	1.50	0.1969	12.00

Inlet Results

SN Element ID	Peak Flow	Peak Lateral Inflow	Peak Flow Intercepted by Inlet	Peak Flow Bypassing Inlet	Inlet Efficiency during Peak	Max Gutter Spread during Peak	Max Gutter Water Elev. during Peak	Max Gutter Water Depth during Peak	Time of Max Depth Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)
1 CB-C1 (EXIST)	4.77	4.55	3.76	1.01	78.78	10.15	487.43	0.27	0 00:31	0.00	0.00
2 CB-C2 (EXIST)	1.84	1.84	0.69	1.16	37.23	3.97	495.37	0.22	0 00:17	0.00	0.00
3 CB-C3 (EXIST)	0.81	0.81	0.41	0.40	50.26	2.79	495.32	0.16	0 00:14	0.00	0.00
4 CB-D1 (EXIST)	3.76	3.73	3.25	0.51	86.32	9.22	487.41	0.25	0 00:31	0.00	0.00
5 CB-E1 (EXIST)	0.88	0.87	0.88	0.00	100.00	4.77	491.80	0.16	0 00:05	0.00	0.00
6 CB-E2 (EXIST)	1.24	1.24	1.06	0.18	85.16	5.68	501.23	0.18	0 00:05	0.00	0.00
7 CB-E3 (EXIST)	1.74	1.74	1.30	0.43	75.04	6.63	501.20	0.20	0 00:05	0.00	0.00
8 CB-F1 (EXIST)	1.41	1.30	1.41	0.00	100.00	6.03	491.46	0.18	0 00:05	0.00	0.00
9 CB-G2	3.17	3.17	N/A	N/A	N/A	9.87	479.94	0.76	0 00:06	0.00	0.00
10 CB-G3	5.39	5.39	N/A	N/A	N/A	14.08	479.63	0.84	0 00:06	0.00	0.00
11 CB-G4	1.00	1.00	1.00	0.00	100.00	5.17	480.32	0.17	0 00:32	0.00	0.00
12 CB-G5	2.00	1.11	2.00	0.00	99.95	7.08	485.82	0.20	0 00:31	0.00	0.00
13 CB-H1	1.47	1.47	1.18	0.28	80.65	6.16	480.85	0.19	0 00:06	0.00	0.00
14 CB-H2	1.76	0.92	1.51	0.25	86.01	8.44	485.35	0.23	0 00:05	0.00	0.00
15 CB-H3	2.52	2.52	1.60	0.92	63.61	7.81	490.59	0.22	0 00:05	0.00	0.00
16 CB-H5	12.22	12.22	N/A	N/A	N/A	24.31	489.60	1.05	0 00:29	0.00	0.00
17 CB-H6	4.59	4.59	N/A	N/A	N/A	12.64	489.37	0.82	0 00:01	0.00	0.00
18 CB-I2	0.42	0.42	N/A	N/A	N/A	1.90	480.24	0.27	0 00:40	0.00	0.00
19 CB-I3	2.58	2.58	2.49	0.09	96.42	7.88	484.19	0.22	0 00:05	0.00	0.00
20 CB-K1	8.04	8.04	N/A	N/A	N/A	18.40	482.96	0.96	0 00:40	0.00	0.00

Storage Nodes

Storage Node : POND1

Input Data

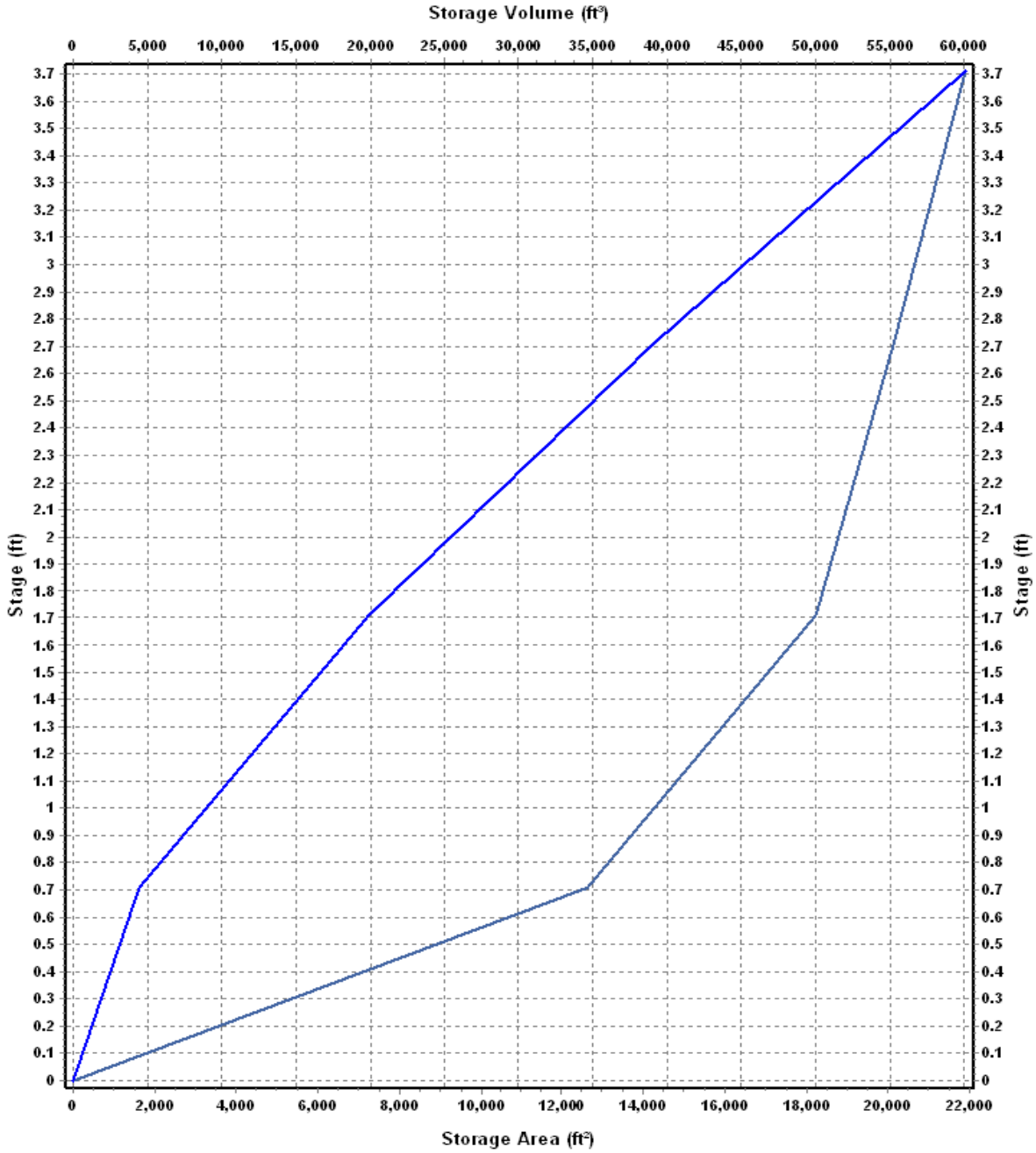
Invert Elevation (ft)	473.29
Max (Rim) Elevation (ft)	477.00
Max (Rim) Offset (ft)	3.71
Initial Water Elevation (ft)	473.29
Initial Water Depth (ft)	0.00
Ponded Area (ft ²)	0.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : POND1

Stage (ft)	Storage Area (ft ²)	Storage Volume (ft ³)
0	0	0.000
0.71	12615	4478.33
1.71	18216	19893.83
2.71	20116	39059.83
3.71	21896	60065.83

Storage Area Volume Curves



— Storage Area — Storage Volume

Storage Node : POND1 (continued)

Outflow Weirs

SN Element ID	Weir Type	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1 Weir-02	Rectangular	No	476.00	2.71	15.00	1.00	3.33

Outflow Orifices

SN Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1 Orifice-01	Side	Rectangular	No		26.50	21.00	0.00	0.63

Output Summary Results

Peak Inflow (cfs)	32.97
Peak Lateral Inflow (cfs)	3.87
Peak Outflow (cfs)	22.27
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	475.71
Max HGL Depth Attained (ft)	2.42
Average HGL Elevation Attained (ft)	473.45
Average HGL Depth Attained (ft)	0.16
Time of Max HGL Occurrence (days hh:mm)	0 00:52
Total Exfiltration Volume (1000-ft ³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Project Description

File Name 16044 Kensington Place Ph 2 Drainage Post-Dev 50 YEAR.SPF
Description J:\Projects\2016 Projects\16044 Kensington Place Subdivision Lee Pengelly\Drawings\DWG\Phase 2\KENSINGTON PLACE PHASE 2 R4.dwg

Project Options

Flow Units CFS
Elevation Type Elevation
Hydrology Method Rational
Time of Concentration (TOC) Method SCS TR-55
Link Routing Method Kinematic Wave
Enable Overflow Ponding at Nodes YES
Skip Steady State Analysis Time Periods NO

Analysis Options

Start Analysis On Aug 18, 2017 00:00:00
End Analysis On Aug 19, 2017 00:00:00
Start Reporting On Aug 18, 2017 00:00:00
Antecedent Dry Days 0 days
Runoff (Dry Weather) Time Step 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step 0 00:05:00 days hh:mm:ss
Reporting Time Step 0 00:05:00 days hh:mm:ss
Routing Time Step 30 seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins.....	31
Nodes.....	28
<i>Junctions</i>	5
<i>Outfalls</i>	2
<i>Flow Diversions</i>	0
<i>Inlets</i>	20
<i>Storage Nodes</i>	1
Links.....	41
<i>Channels</i>	14
<i>Pipes</i>	25
<i>Pumps</i>	0
<i>Orifices</i>	1
<i>Weirs</i>	1
<i>Outlets</i>	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period..... 50 year(s)

Subbasin Summary

SN Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1 (STORM-BASINS).1	2.38	0.6100	3.64	2.22	5.27	4.41	0 01:11:46
2 (STORM-BASINS).10	0.87	0.6300	2.37	1.49	1.30	2.87	0 00:27:10
3 (STORM-BASINS).11	0.12	0.9000	0.78	0.70	0.08	0.96	0 00:05:00
4 (STORM-BASINS).12	0.16	0.9000	0.78	0.70	0.11	1.37	0 00:05:00
5 (STORM-BASINS).13	0.23	0.9000	0.78	0.70	0.16	1.93	0 00:05:00
6 (STORM-BASINS).14	0.74	0.7200	0.78	0.56	0.41	4.94	0 00:05:00
7 (STORM-BASINS).15	1.28	0.7200	0.78	0.56	0.72	8.60	0 00:05:00
8 (STORM-BASINS).16	0.21	0.7500	0.78	0.58	0.12	1.44	0 00:05:00
9 (STORM-BASINS).17	0.28	0.9000	0.78	0.70	0.19	2.31	0 00:05:00
10 (STORM-BASINS).18	3.51	0.6000	2.84	1.70	5.98	9.01	0 00:39:45
11 (STORM-BASINS).19	0.05	0.9000	0.78	0.70	0.04	0.44	0 00:05:00
12 (STORM-BASINS).2	0.96	0.6300	3.16	1.99	1.91	2.26	0 00:50:36
13 (STORM-BASINS).20	0.19	0.9000	0.78	0.70	0.14	1.62	0 00:05:00
14 (STORM-BASINS).21	0.22	0.9000	0.78	0.70	0.15	1.84	0 00:05:00
15 (STORM-BASINS).22	0.20	0.9000	0.78	0.70	0.14	1.67	0 00:05:00
16 (STORM-BASINS).23A	0.88	0.6000	2.56	1.54	1.35	2.55	0 00:31:54
17 (STORM-BASINS).23B	0.21	0.9000	0.78	0.70	0.15	1.75	0 00:05:00
18 (STORM-BASINS).26	1.06	0.6000	2.70	1.62	1.71	2.87	0 00:35:44
19 (STORM-BASINS).27	0.58	0.7200	1.77	1.27	0.74	2.77	0 00:15:56
20 (STORM-BASINS).28	0.22	0.7200	1.87	1.34	0.30	1.02	0 00:17:36
21 (STORM-BASINS).29	0.15	0.9000	0.78	0.70	0.11	1.29	0 00:05:00
22 (STORM-BASINS).3	1.34	0.6300	2.53	1.60	2.13	4.15	0 00:30:46
23 (STORM-BASINS).30	0.12	0.9000	0.78	0.70	0.08	1.01	0 00:05:00
24 (STORM-BASINS).31	0.12	0.9000	0.78	0.70	0.08	0.99	0 00:05:00
25 (STORM-BASINS).4	0.17	0.7500	1.66	1.25	0.21	0.89	0 00:14:33
26 (STORM-BASINS).5	0.46	0.6900	1.82	1.26	0.57	2.02	0 00:17:04
27 (STORM-BASINS).6	1.73	0.6000	2.55	1.53	2.64	5.06	0 00:31:16
28 (STORM-BASINS).7A	0.38	0.6600	2.54	1.68	0.64	1.24	0 00:30:58
29 (STORM-BASINS).7B	0.28	0.7200	2.17	1.56	0.43	1.11	0 00:23:23
30 (STORM-BASINS).8	2.66	0.6000	3.11	1.86	4.96	6.08	0 00:49:03
31 (STORM-BASINS).9	0.06	0.9000	0.78	0.70	0.04	0.46	0 00:05:00

Node Summary

SN Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation	Ponded Area	Peak Inflow	Max HGL Elevation Attained	Max Surcharge Depth Attained	Min Freeboard	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded	
		(ft)	(ft)	(ft)	(ft)	(ft²)	(cfs)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)	
1	CB-I1	Junction	476.43	480.49	476.43	480.49	0.00	10.61	477.62	0.00	2.86	0 00:00	0.00	0.00
2	CONNECT-G	Junction	483.22	485.22	483.22	485.22	0.00	7.72	484.16	0.00	1.07	0 00:00	0.00	0.00
3	CONNECT-I	Junction	483.38	489.38	483.38	489.38	0.00	5.05	483.94	0.00	5.44	0 00:00	0.00	0.00
4	FES-H2	Junction	482.37	485.12	482.37	485.12	0.00	19.74	483.44	0.00	1.68	0 00:00	0.00	0.00
5	Jun-01	Junction	473.29	477.00	473.29	477.00	0.00	24.21	475.00	0.00	2.00	0 00:00	0.00	0.00
6	Out-01	Outfall	473.16					24.21	474.87					
7	Out-1ST-G3	Outfall	475.00					0.00	475.00					
8	POND1	Storage Node	473.29	477.00	473.29		0.00	36.61	475.95			0.00	0.00	

Link Summary

SN Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/Total Depth Ratio	Total Time Reported (min)	Condition
1	ST-C1	Pipe	CB-C1 (EXIST) CONNECT-G	92.51	483.78	483.22	0.6000	24.000	0.0130	7.72	17.52	0.44	5.40	0.93	0.46	0.00	Calculated
2	ST-C2	Pipe	CB-C2 (EXIST) CB-C1 (EXIST)	200.00	490.63	483.88	3.3800	18.000	0.0130	1.11	19.30	0.06	7.23	0.24	0.16	0.00	Calculated
3	ST-C3	Pipe	CB-C3 (EXIST) CB-C2 (EXIST)	32.02	490.95	490.63	1.0000	18.000	0.0130	0.43	10.50	0.04	2.93	0.21	0.14	0.00	Calculated
4	ST-CS1	Pipe	Jun-01 Out-01	24.64	473.29	473.16	0.5300	30.000	0.0130	24.21	29.79	0.81	6.76	1.71	0.68	0.00	Calculated
5	ST-D1	Pipe	CB-D1 (EXIST) CB-C1 (EXIST)	32.02	484.10	483.88	0.6900	18.000	0.0130	3.47	8.71	0.40	4.65	0.66	0.44	0.00	Calculated
6	ST-E1 (2)	Pipe	CB-E1 (EXIST) CONNECT-I	133.90	487.00	483.38	2.7000	18.000	0.0130	5.05	17.26	0.29	8.51	0.56	0.37	0.00	Calculated
7	ST-E2 (EXIST)	Pipe	CB-E2 (EXIST) CB-E1 (EXIST)	200.00	496.73	487.10	4.8100	18.000	0.0130	2.49	23.05	0.11	8.60	0.33	0.22	0.00	Calculated
8	ST-E3 (EXIST)	Pipe	CB-E3 (EXIST) CB-E2 (EXIST)	32.02	497.60	496.83	2.4000	18.000	0.0130	1.38	16.27	0.08	6.54	0.30	0.20	0.00	Calculated
9	ST-F1 (EXIST)	Pipe	CB-F1 (EXIST) CB-E1 (EXIST)	32.02	487.57	487.10	1.4600	18.000	0.0130	1.61	12.70	0.13	4.93	0.36	0.24	0.00	Calculated
10	ST-G1	Pipe	CB-G2 POND1	72.10	474.50	473.92	0.8000	30.000	0.0130	36.19	36.79	0.98	8.58	2.01	0.81	0.00	Calculated
11	ST-G2	Pipe	CB-G3 CB-G2	31.99	474.85	474.50	1.0900	30.000	0.0130	33.77	42.90	0.79	9.69	1.67	0.67	0.00	Calculated
12	ST-G3	Pipe	CB-G4 CB-G3	49.09	476.90	474.95	3.9700	24.000	0.0130	10.74	45.08	0.24	11.76	0.66	0.33	0.00	Calculated
13	ST-G4	Pipe	CB-G5 CB-G4	238.61	482.36	476.90	2.2900	24.000	0.0130	10.03	34.22	0.29	9.47	0.74	0.37	0.00	Calculated
14	ST-G5	Pipe	CONNECT-G CB-G5	145.74	483.22	482.35	0.6000	24.000	0.0130	7.71	17.44	0.44	5.39	0.93	0.47	0.00	Calculated
15	ST-H1	Pipe	CB-H1 CB-G3	190.63	476.09	474.95	0.6000	30.000	0.0130	29.91	31.72	0.94	7.49	1.93	0.77	0.00	Calculated
16	ST-H2	Pipe	FES-H2 CB-H1	252.90	482.37	476.19	2.4400	24.000	0.0130	19.56	35.36	0.55	11.62	1.06	0.53	0.00	Calculated
17	ST-H2A	Pipe	CB-H2 FES-H2	37.10	483.38	482.37	2.7200	24.000	0.0130	19.74	37.32	0.53	12.05	1.03	0.52	0.00	Calculated
18	ST-H3	Pipe	CB-H3 CB-H2	48.08	483.88	483.38	1.0400	24.000	0.0130	18.52	23.11	0.80	8.22	1.35	0.68	0.00	Calculated
19	ST-H5	Pipe	CB-H5 CB-H3	378.49	485.87	483.98	0.5000	24.000	0.0130	16.92	16.01	1.06	6.30	1.79	0.90	0.00	> CAPACITY
20	ST-H6	Pipe	CB-H6 CB-H5	32.00	488.21	487.89	1.0000	18.000	0.0130	5.12	10.50	0.49	5.91	0.74	0.49	0.00	Calculated
21	ST-I1	Pipe	CB-I1 CB-H1	48.08	476.43	476.19	0.5000	24.000	0.0130	10.61	16.00	0.66	5.44	1.19	0.60	0.00	Calculated
22	ST-I2	Pipe	CB-I2 CB-I1	95.00	476.91	476.43	0.5100	24.000	0.0130	10.61	16.08	0.66	5.47	1.19	0.59	0.00	Calculated
23	ST-I3	Pipe	CB-I3 CB-I2	212.56	479.00	477.00	0.9400	18.000	0.0130	5.58	10.19	0.55	5.97	0.79	0.53	0.00	Calculated
24	ST-I4	Pipe	CONNECT-I CB-I3	78.66	483.38	481.27	2.6900	18.000	0.0130	5.05	17.22	0.29	8.47	0.56	0.37	0.00	Calculated
25	ST-K1	Pipe	CB-K1 CB-I2	32.05	477.32	477.00	1.0000	18.000	0.0130	9.01	19.20	0.47	10.69	0.72	0.48	0.00	Calculated
26	Gutter-05	Channel	CB-C3 (EXIST) CB-D1 (EXIST)	200.35	495.00	487.00	3.9900	6.000	0.0130	0.43	9.52	0.05	3.44	0.15	0.31	0.00	
27	Gutter-06	Channel	CB-C2 (EXIST) CB-C1 (EXIST)	200.99	495.00	487.00	3.9800	6.000	0.0130	1.25	9.50	0.13	3.98	0.23	0.46	0.00	
28	Gutter-07	Channel	CB-C1 (EXIST) CB-G5	239.28	487.00	485.61	0.5800	6.000	0.0130	1.26	3.83	0.33	1.85	0.32	0.65	0.00	
29	Gutter-08	Channel	CB-G5 CB-G4	240.40	485.61	480.15	2.2700	6.000	0.0320	0.05	7.18	0.01	1.93	0.07	0.14	0.00	
30	Gutter-09	Channel	CB-G4 CB-G3	57.48	480.15	478.65	2.6100	6.000	0.0320	0.00	7.33	0.00	0.00	0.00	0.00	0.00	
31	Gutter-10	Channel	CB-H1 CB-G3	192.99	480.66	478.79	0.9700	6.000	0.0320	0.22	4.69	0.05	2.52	0.15	0.29	0.00	
32	Gutter-12	Channel	CB-I3 CB-I2	213.95	483.97	479.50	2.0900	6.000	0.0320	0.14	6.51	0.02	1.99	0.11	0.23	0.00	
33	Gutter-13	Channel	CB-E1 (EXIST) CB-I3	213.94	491.00	483.97	3.2900	6.000	0.0320	0.00	9.03	0.00	0.00	0.00	0.00	0.00	
34	Gutter-14	Channel	CB-E2 (EXIST) CB-E1 (EXIST)	201.82	500.50	491.00	4.7100	6.000	0.0320	0.16	10.29	0.02	4.01	0.10	0.20	0.00	
35	Gutter-15	Channel	CB-E3 (EXIST) CB-F1 (EXIST)	201.21	500.50	491.00	4.7200	6.000	0.0320	0.40	10.48	0.04	4.65	0.14	0.28	0.00	
36	Gutter-16	Channel	CB-F1 (EXIST) CB-K1	425.27	491.00	482.00	2.1200	6.000	0.0320	0.00	7.04	0.00	0.00	0.00	0.01	0.00	
37	Gutter-17	Channel	CB-H2 CB-H1	292.35	485.12	480.66	1.5200	6.000	0.0320	0.29	5.88	0.05	2.28	0.15	0.31	0.00	
38	Gutter-23	Channel	CB-D1 (EXIST) CB-G2	587.46	487.00	479.00	1.3600	6.000	0.0320	0.56	5.55	0.10	2.75	0.20	0.41	0.00	
39	Gutter-26	Channel	CB-H3 CB-H2	57.06	490.37	485.12	9.2000	6.000	0.0320	1.08	14.45	0.07	3.44	0.19	0.37	0.00	
40	Orifice-01	Orifice	POND1 Jun-01		473.29	473.29		26.500		24.21							
41	Weir-02	Weir	POND1 Jun-01		473.29	473.29				0.00							

Inlet Summary

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Pondered Water Elevation (ft)	Peak Area (ft ²)	Peak Flow (cfs)	Peak Flow Intercepted (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	
1 CB-C1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.78	487.16	483.78	N/A	5.31	4.00	1.31	75.34	12.00	10.60	487.43
2 CB-C2 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	490.63	495.14	490.63	N/A	2.02	0.73	1.30	35.93	12.00	4.14	495.37
3 CB-C3 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	490.95	495.16	490.95	N/A	0.89	0.43	0.45	48.82	12.00	2.91	495.33
4 CB-D1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	484.10	487.17	484.10	N/A	4.18	3.47	0.71	83.03	12.00	9.62	487.42
5 CB-E1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	487.00	491.64	487.00	N/A	0.98	0.98	0.00	100.00	12.00	5.12	491.81
6 CB-E2 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	496.73	501.05	496.73	N/A	1.37	1.13	0.24	82.34	12.00	5.96	501.23
7 CB-E3 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	497.60	501.00	497.60	N/A	1.93	1.39	0.54	71.96	12.00	6.94	501.21
8 CB-F1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	487.57	491.28	487.57	N/A	1.61	1.61	0.00	100.00	12.00	6.42	491.47
9 CB-G2	FHWA HEC-22	GENERIC	N/A	On Sag	1	474.50	479.18	474.50	0.00	3.51	N/A	N/A	N/A	12.00	10.56	479.96
10 CB-G3	FHWA HEC-22	GENERIC	N/A	On Sag	1	474.85	478.79	474.85	0.00	6.08	N/A	N/A	N/A	12.00	15.26	479.66
11 CB-G4	FHWA HEC-22	GENERIC	N/A	On Grade	1	476.90	480.15	476.90	N/A	1.11	1.11	0.00	100.00	12.00	5.39	480.32
12 CB-G5	FHWA HEC-22	GENERIC	N/A	On Grade	1	482.36	485.61	482.36	N/A	2.42	2.36	0.06	97.62	12.00	7.66	485.83
13 CB-H1	FHWA HEC-22	GENERIC	N/A	On Grade	1	476.09	480.66	476.09	N/A	1.62	1.26	0.37	77.29	12.00	6.44	480.85
14 CB-H2	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.38	485.12	483.38	N/A	2.01	1.65	0.36	82.17	12.00	8.95	485.36
15 CB-H3	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.88	490.37	483.88	N/A	2.77	1.68	1.09	60.71	12.00	8.11	490.59
16 CB-H5	FHWA HEC-22	GENERIC	N/A	On Sag	1	485.87	488.55	485.87	0.00	13.53	N/A	N/A	N/A	12.00	25.90	489.63
17 CB-H6	FHWA HEC-22	GENERIC	N/A	On Sag	1	488.21	488.55	488.21	0.00	5.12	N/A	N/A	N/A	12.00	13.61	489.39
18 CB-I2	FHWA HEC-22	GENERIC	N/A	On Sag	1	476.91	479.97	476.91	0.00	0.46	N/A	N/A	N/A	12.00	2.11	480.27
19 CB-I3	FHWA HEC-22	GENERIC	N/A	On Grade	1	479.00	483.97	479.00	N/A	2.87	2.69	0.17	93.99	12.00	8.23	484.19
20 CB-K1	FHWA HEC-22	GENERIC	N/A	On Sag	1	478.07	482.00	478.07	0.00	9.01	N/A	N/A	N/A	12.00	19.85	482.99

Subbasin Hydrology

Subbasin : {STORM-BASINS}.1

Input Data

Area (ac) 2.38
Weighted Runoff Coefficient 0.6100

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
Residential	1.66	-	0.70
Pasture	0.71	-	0.40
Composite Area & Weighted Runoff Coeff.	2.37		0.61

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where :

T_c = Time of Concentration (hr)
n = Manning's roughness
L_f = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
S_f = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (S_f^{0.5}) (unpaved surface)
V = 20.3282 * (S_f^{0.5}) (paved surface)
V = 15.0 * (S_f^{0.5}) (grassed waterway surface)
V = 10.0 * (S_f^{0.5}) (nearly bare & untilled surface)
V = 9.0 * (S_f^{0.5}) (cultivated straight rows surface)
V = 7.0 * (S_f^{0.5}) (short grass pasture surface)
V = 5.0 * (S_f^{0.5}) (woodland surface)
V = 2.5 * (S_f^{0.5}) (forest w/heavy litter surface)
T_c = (L_f / V) / (3600 sec/hr)

Where:

T_c = Time of Concentration (hr)
L_f = Flow Length (ft)
V = Velocity (ft/sec)
S_f = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n
R = A_q / W_p
T_c = (L_f / V) / (3600 sec/hr)

Where :

T_c = Time of Concentration (hr)
L_f = Flow Length (ft)
R = Hydraulic Radius (ft)
A_q = Flow Area (ft²)
W_p = Wetted Perimeter (ft)
V = Velocity (ft/sec)
S_f = Slope (ft/ft)
n = Manning's roughness

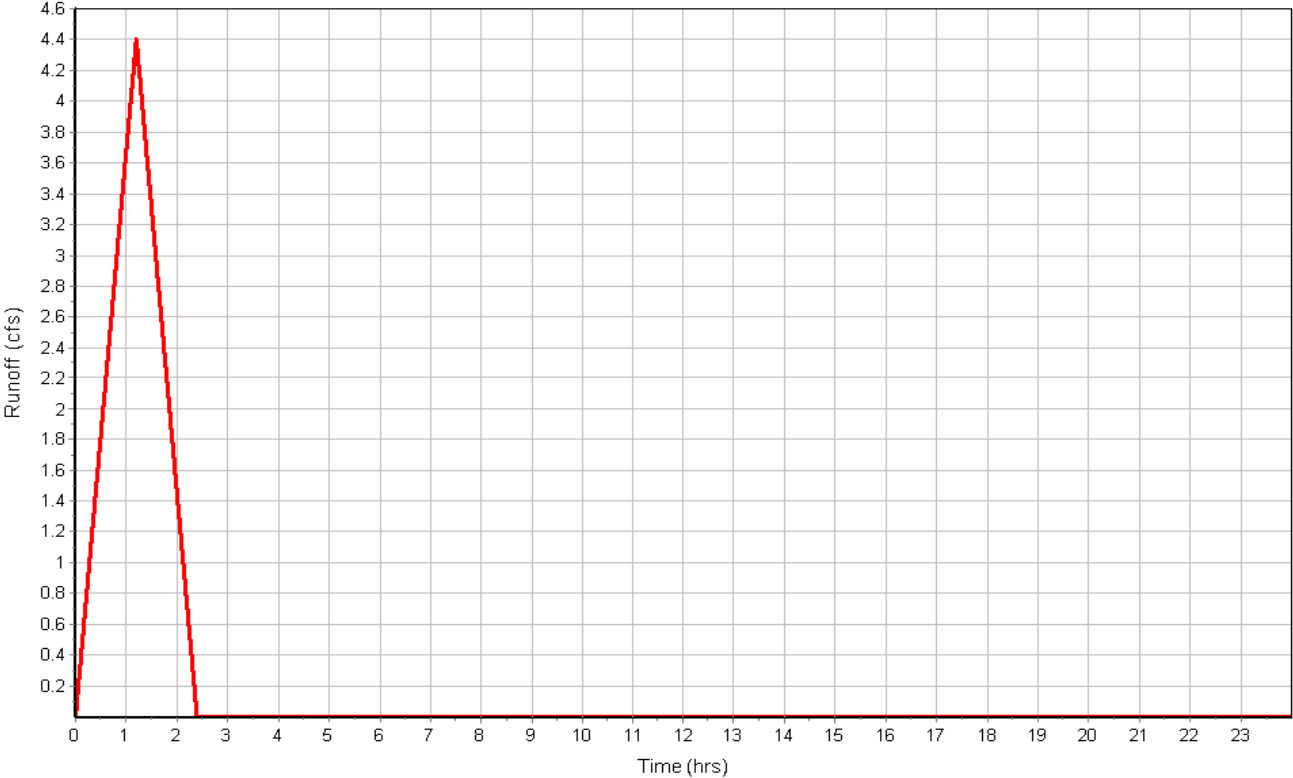
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	1221.57	0.00	0.00
Slope (%) :	2.6	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.28	0.00	0.00
Computed Flow Time (min) :	71.78	0.00	0.00
Total TOC (min)	71.78		

Subbasin Runoff Results

Total Rainfall (in)	3.64
Total Runoff (in)	2.22
Peak Runoff (cfs)	4.41
Rainfall Intensity	3.038
Weighted Runoff Coefficient	0.6100
Time of Concentration (days hh:mm:ss)	0 01:11:47

Subbasin : {STORM-BASINS}.1

Runoff Hydrograph



Subbasin : {STORM-BASINS}.10

Input Data

Area (ac) 0.87
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.78	-	0.60
-	0.09	-	0.90
Composite Area & Weighted Runoff Coeff.	0.87		0.63

Time of Concentration

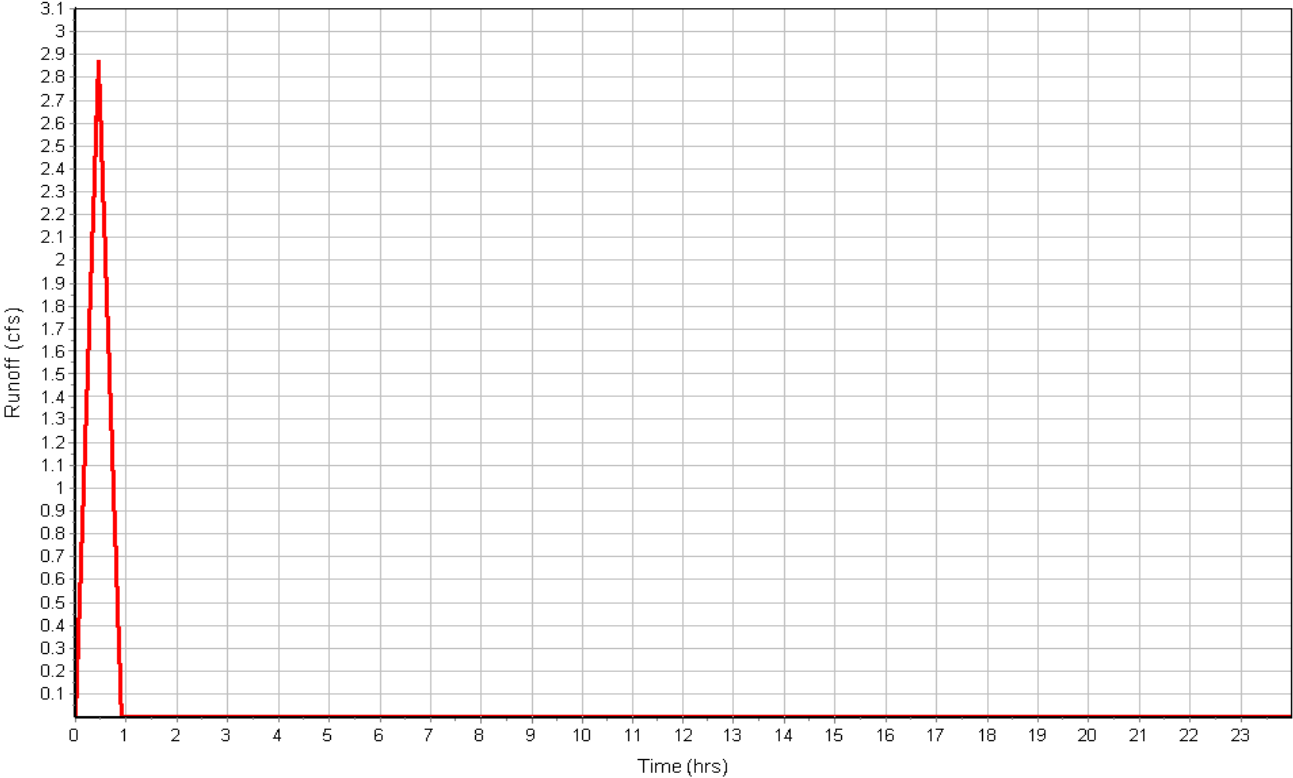
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	421.06	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.26	0.00	0.00
Computed Flow Time (min) :	27.18	0.00	0.00
Total TOC (min)	27.18		

Subbasin Runoff Results

Total Rainfall (in) 2.37
 Total Runoff (in) 1.49
 Peak Runoff (cfs) 2.87
 Rainfall Intensity 5.224
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:27:11

Subbasin : {STORM-BASINS}.10

Runoff Hydrograph



Subbasin : {STORM-BASINS}.11

Input Data

Area (ac) 0.12
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

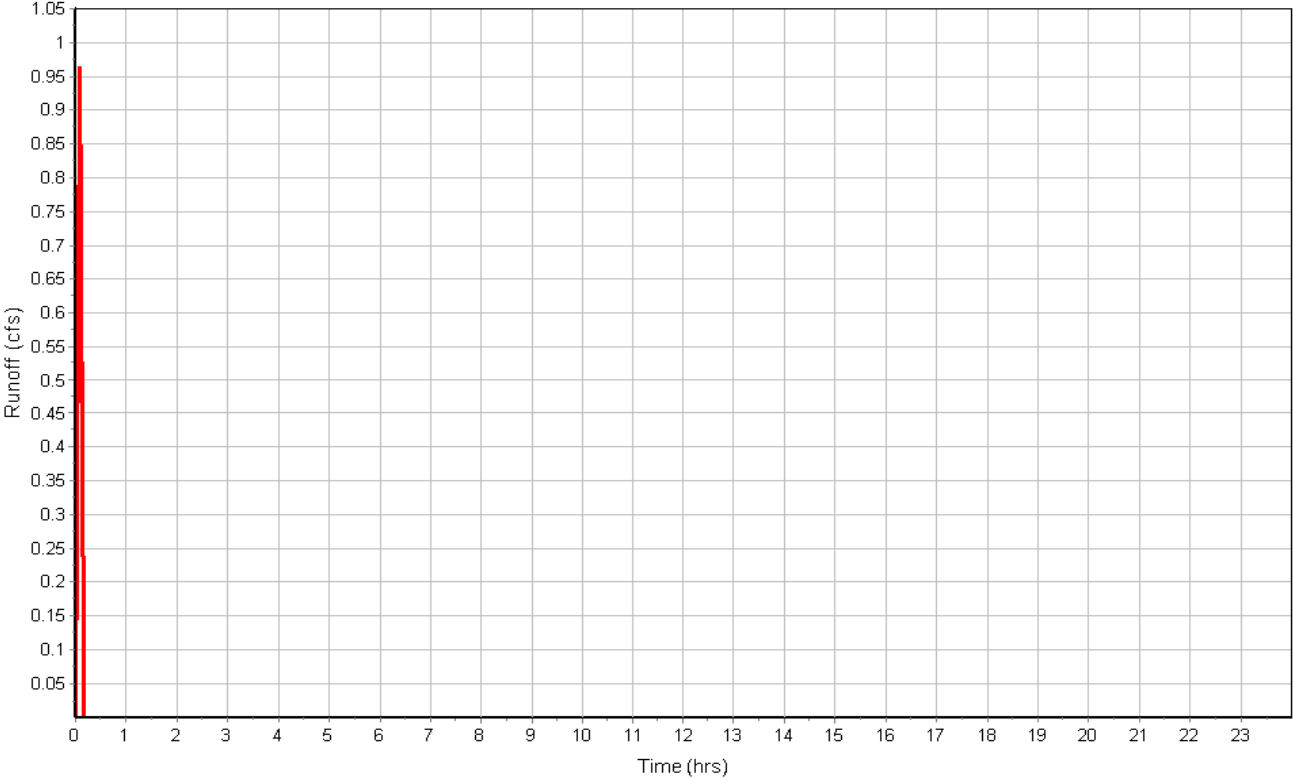
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	251.93	0.00	0.00
Slope (%) :	4.7	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	4.41	0.00	0.00
Computed Flow Time (min) :	0.95	0.00	0.00
Total TOC (min)	0.95		

Subbasin Runoff Results

Total Rainfall (in) 0.78
 Total Runoff (in) 0.70
 Peak Runoff (cfs) 0.96
 Rainfall Intensity 9.300
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:00:57

Subbasin : {STORM-BASINS}.11

Runoff Hydrograph



Subbasin : {STORM-BASINS}.12

Input Data

Area (ac) 0.16
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.16	-	0.90
Composite Area & Weighted Runoff Coeff.	0.16		0.90

Time of Concentration

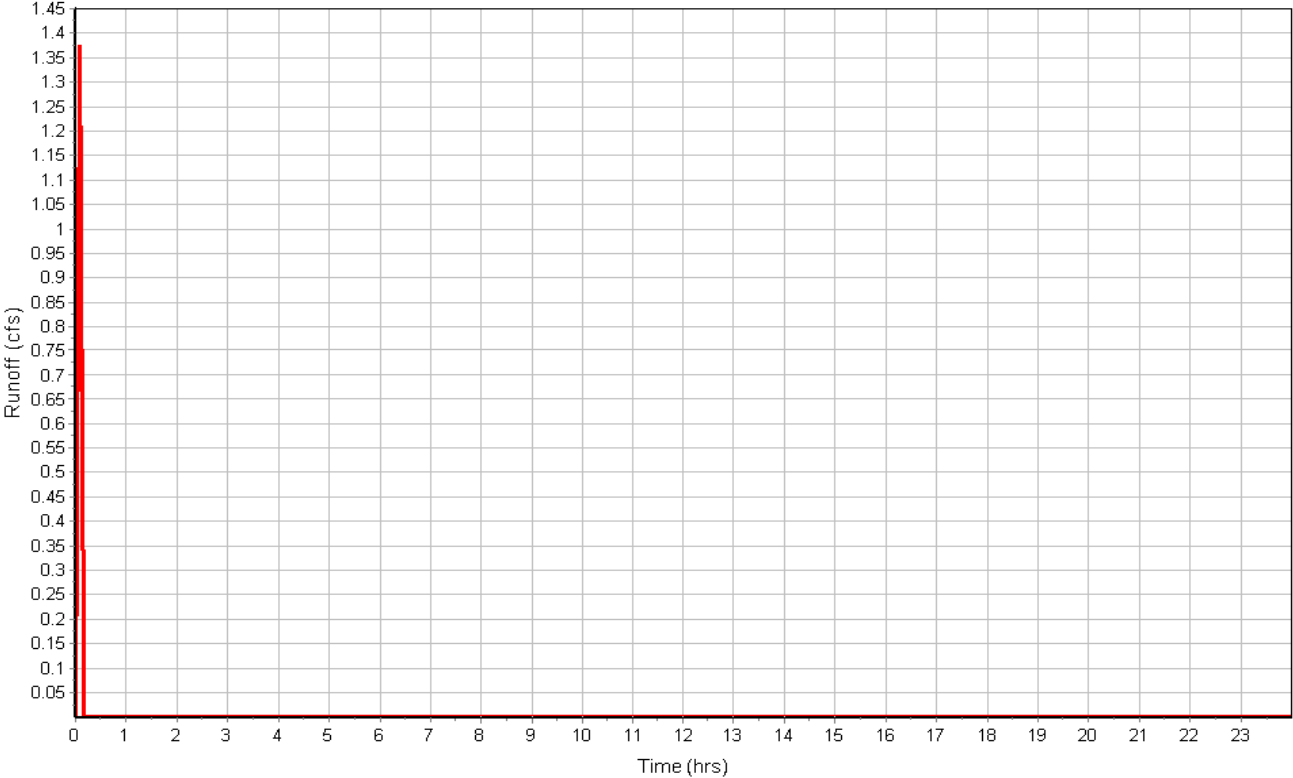
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	261.41	0.00	0.00
Slope (%) :	1.9	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.80	0.00	0.00
Computed Flow Time (min) :	1.56	0.00	0.00
Total TOC (min)	1.56		

Subbasin Runoff Results

Total Rainfall (in) 0.78
 Total Runoff (in) 0.70
 Peak Runoff (cfs) 1.37
 Rainfall Intensity 9.300
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:34

Subbasin : {STORM-BASINS}.12

Runoff Hydrograph



Subbasin : {STORM-BASINS}.13

Input Data

Area (ac) 0.23
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.23	-	0.90
Composite Area & Weighted Runoff Coeff.	0.23		0.90

Time of Concentration

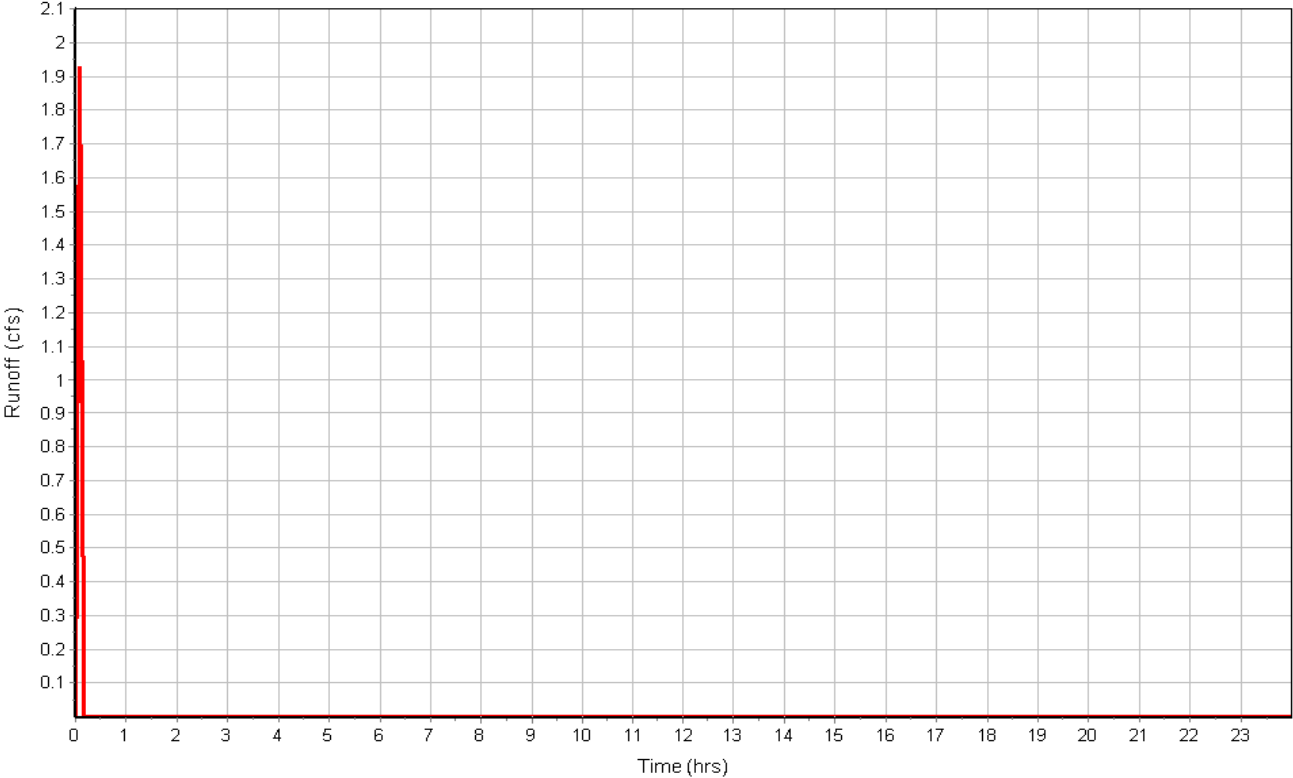
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	407.22	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	2.36	0.00	0.00
Total TOC (min)	2.36		

Subbasin Runoff Results

Total Rainfall (in) 0.78
 Total Runoff (in) 0.70
 Peak Runoff (cfs) 1.93
 Rainfall Intensity 9.300
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:02:22

Subbasin : {STORM-BASINS}.13

Runoff Hydrograph



Subbasin : {STORM-BASINS}.14

Input Data

Area (ac) 0.74
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.74	-	0.72
Composite Area & Weighted Runoff Coeff.	0.74		0.72

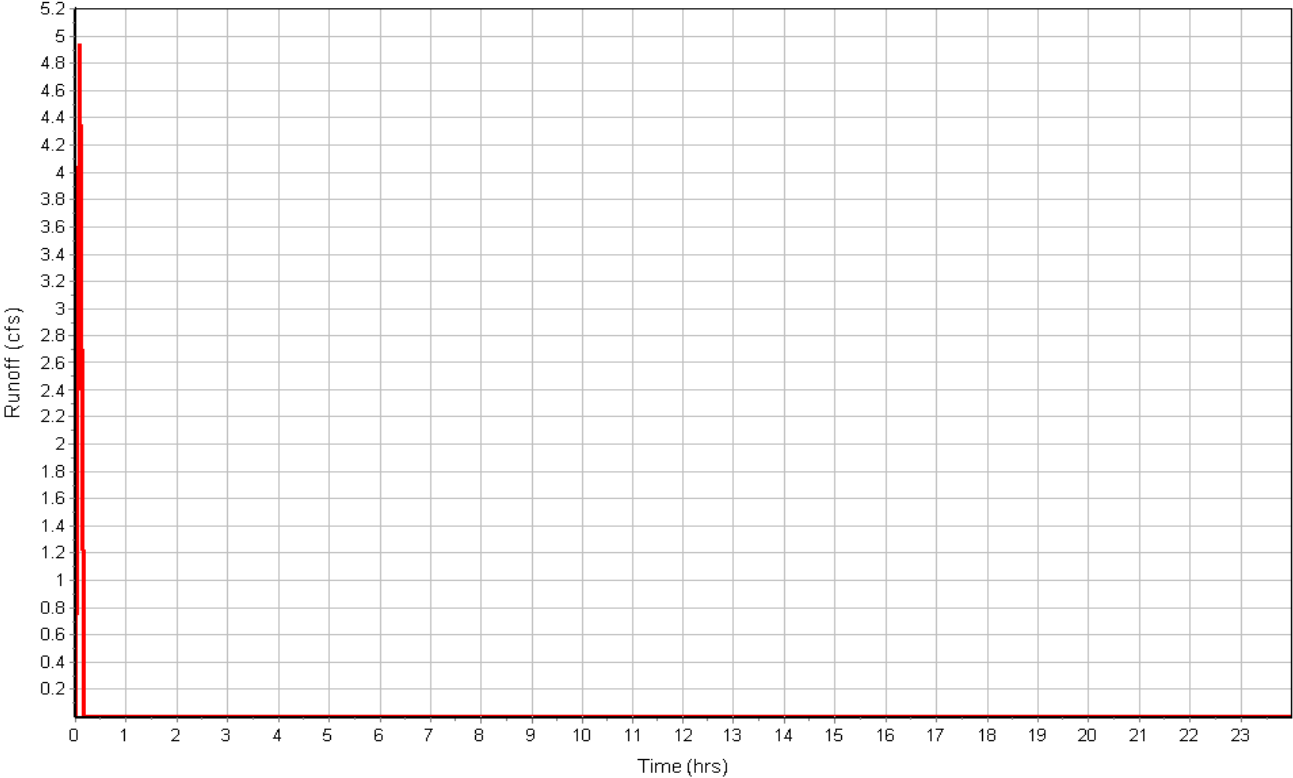
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.56
Peak Runoff (cfs) 4.94
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.14

Runoff Hydrograph



Subbasin : {STORM-BASINS}.15

Input Data

Area (ac) 1.28
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.28	-	0.72
Composite Area & Weighted Runoff Coeff.	1.28		0.72

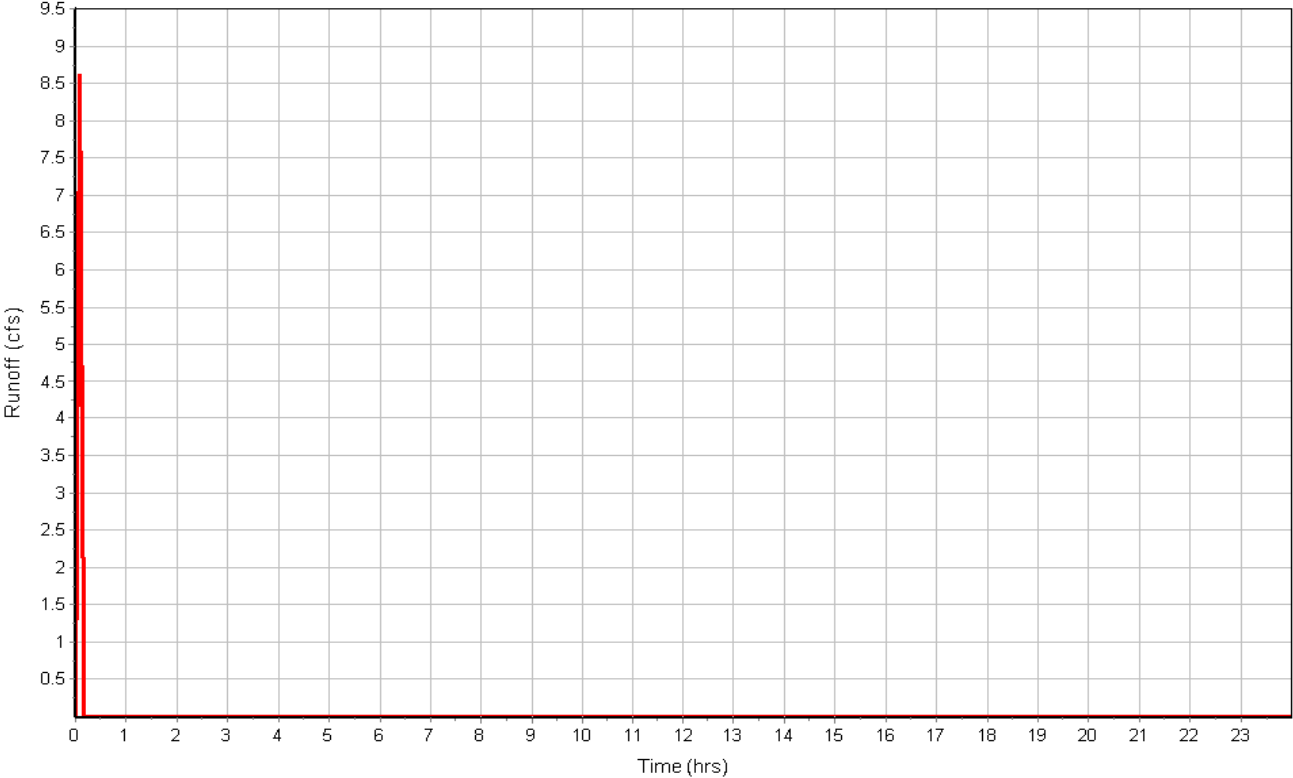
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.56
Peak Runoff (cfs) 8.60
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.15

Runoff Hydrograph



Subbasin : {STORM-BASINS}.16

Input Data

Area (ac) 0.21
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.10	-	0.90
-	0.10	-	0.60
Composite Area & Weighted Runoff Coeff.	0.20		0.75

Time of Concentration

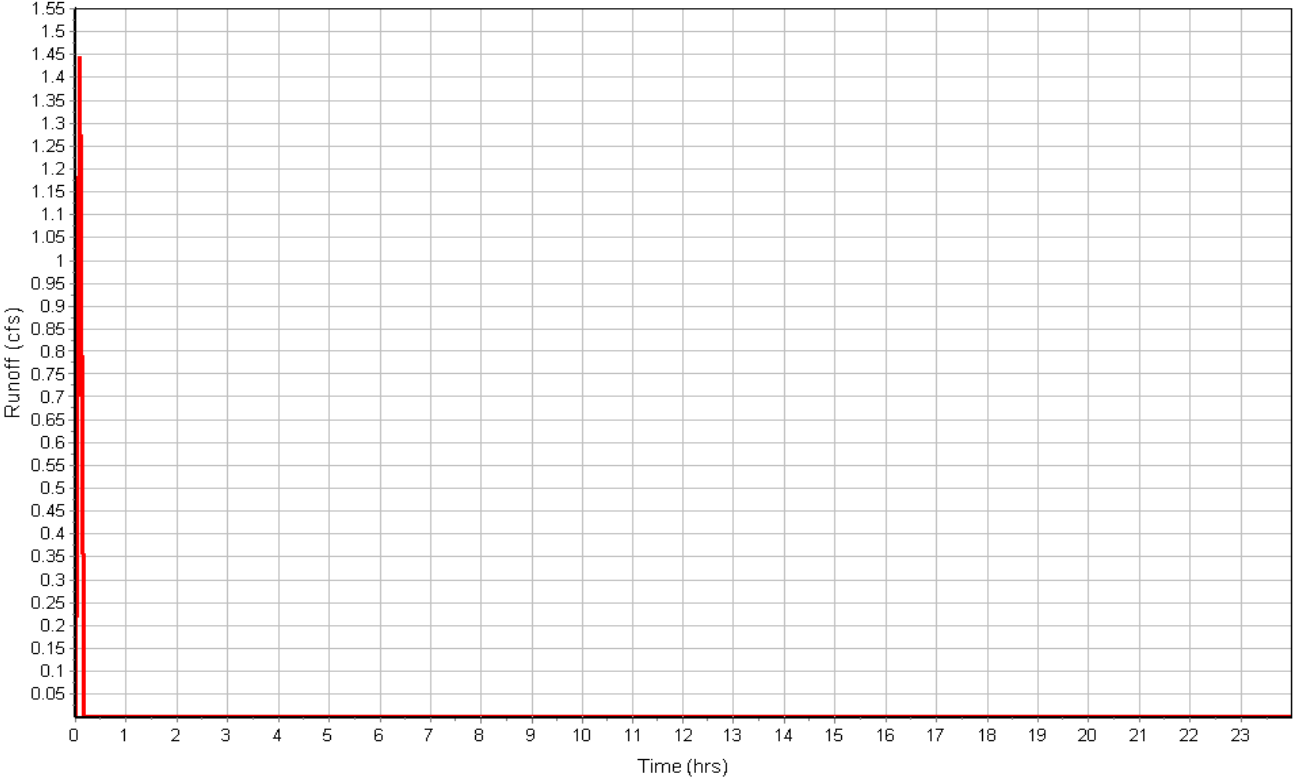
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	45.99	0.00	0.00
Slope (%) :	5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.19	0.00	0.00
Computed Flow Time (min) :	4.01	0.00	0.00
Total TOC (min)	4.01		

Subbasin Runoff Results

Total Rainfall (in) 0.78
 Total Runoff (in) 0.58
 Peak Runoff (cfs) 1.44
 Rainfall Intensity 9.300
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:04:01

Subbasin : {STORM-BASINS}.16

Runoff Hydrograph



Subbasin : {STORM-BASINS}.17

Input Data

Area (ac) 0.28
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.28	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.90

Time of Concentration

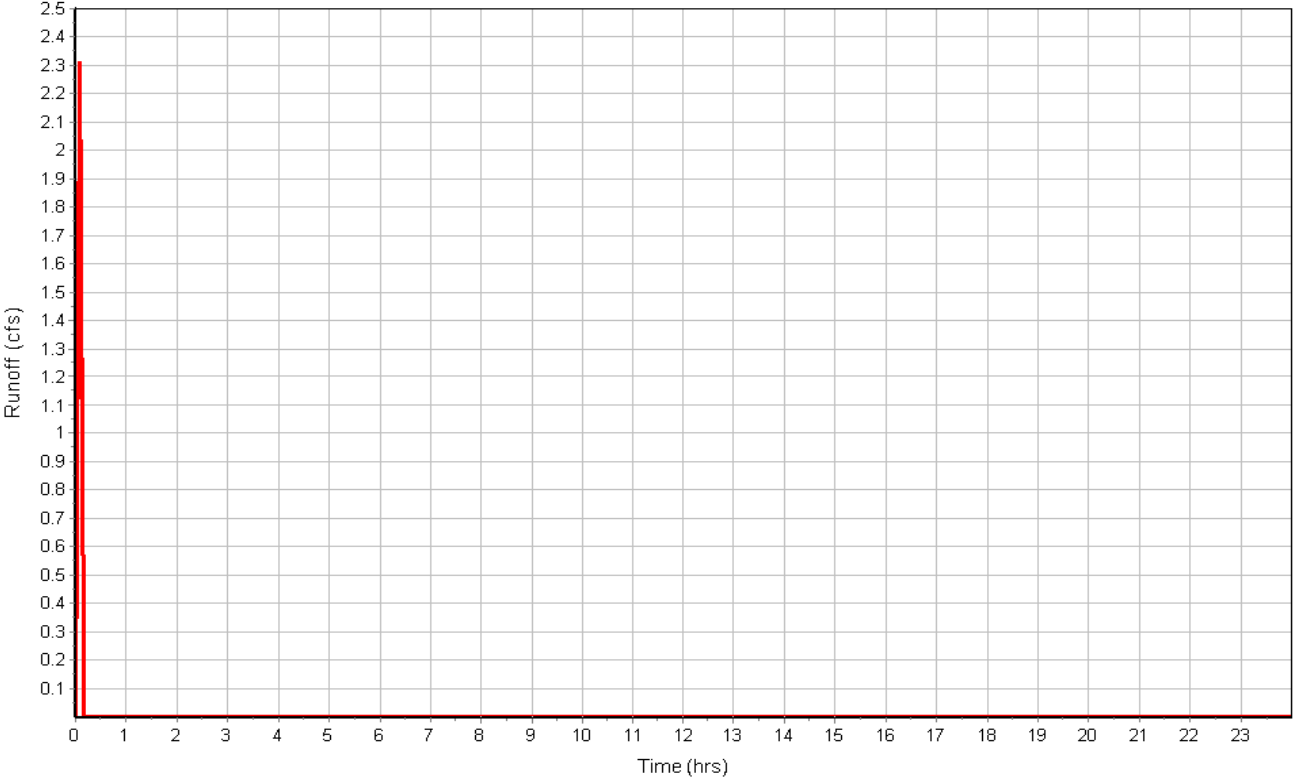
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	400.01	0.00	0.00
Slope (%) :	3.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.80	0.00	0.00
Computed Flow Time (min) :	1.75	0.00	0.00
Total TOC (min)1.75			

Subbasin Runoff Results

Total Rainfall (in) 0.78
 Total Runoff (in) 0.70
 Peak Runoff (cfs) 2.31
 Rainfall Intensity 9.300
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:45

Subbasin : {STORM-BASINS}.17

Runoff Hydrograph



Subbasin : {STORM-BASINS}.18

Input Data

Area (ac) 3.51
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	3.51	-	0.60
Composite Area & Weighted Runoff Coeff.	3.51		0.60

Time of Concentration

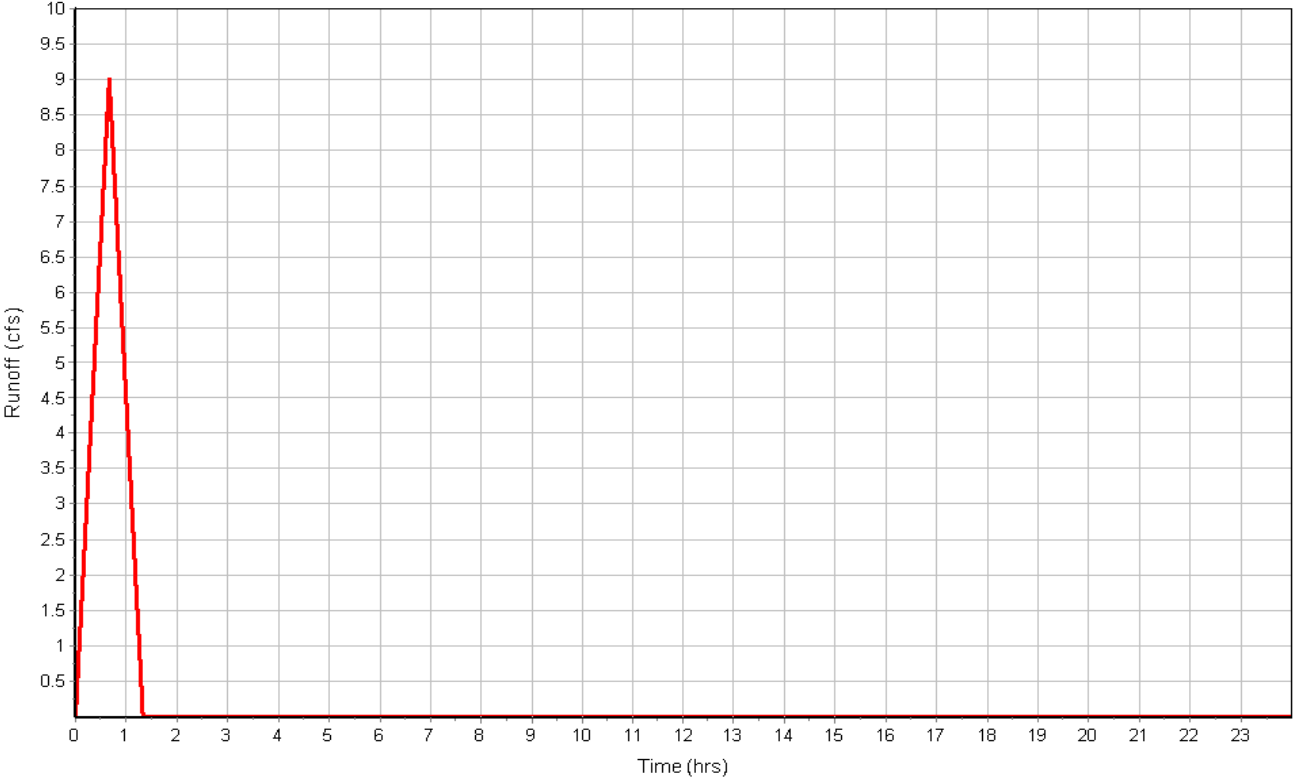
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	723.77	0.00	0.00
Slope (%) :	4	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	39.75	0.00	0.00
Total TOC (min)	39.75		

Subbasin Runoff Results

Total Rainfall (in) 2.84
 Total Runoff (in) 1.70
 Peak Runoff (cfs) 9.01
 Rainfall Intensity 4.275
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:39:45

Subbasin : {STORM-BASINS}.18

Runoff Hydrograph



Subbasin : {STORM-BASINS}.19

Input Data

Area (ac) 0.05
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.05	-	0.90
Composite Area & Weighted Runoff Coeff.	0.05		0.90

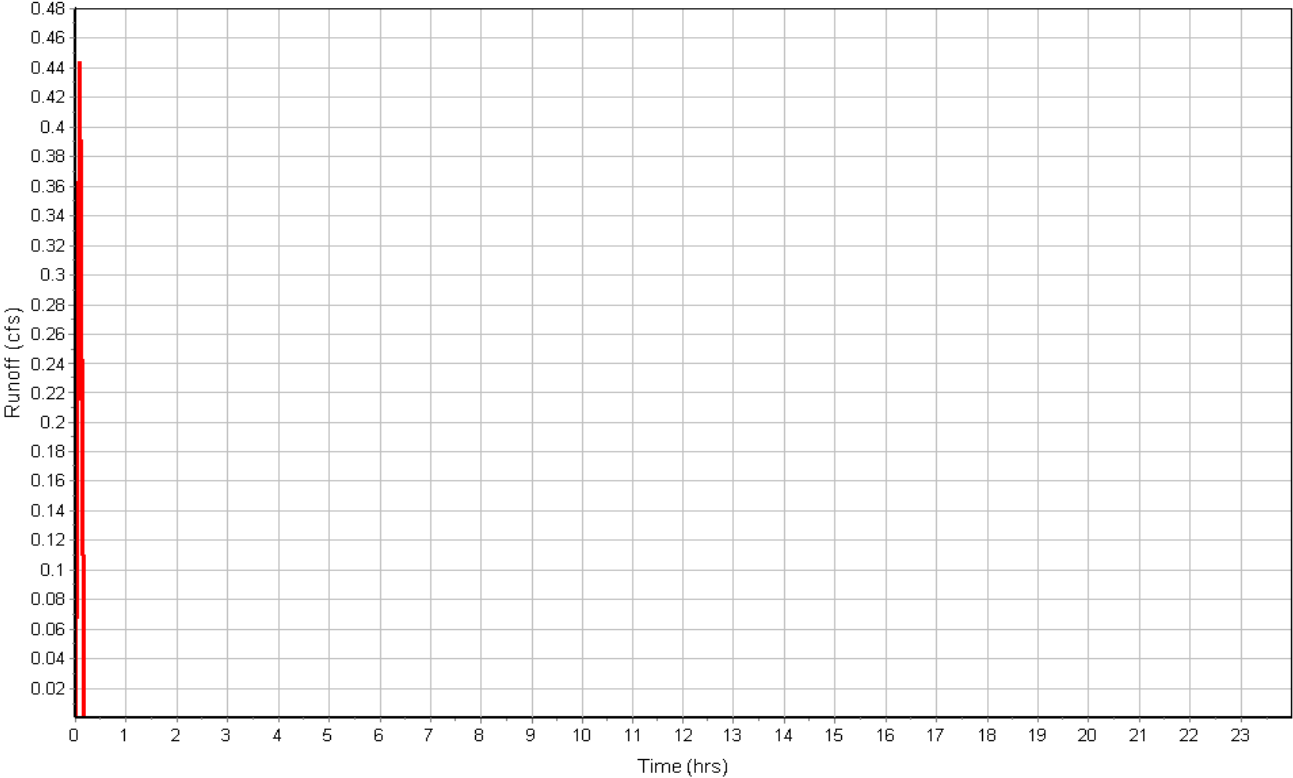
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.70
Peak Runoff (cfs) 0.44
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.19

Runoff Hydrograph



Subbasin : {STORM-BASINS}.2

Input Data

Area (ac) 0.96
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.86	-	0.60
-	0.10	-	0.90
Composite Area & Weighted Runoff Coeff.	0.96		0.63

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	606.64	0.00	0.00
Slope (%) :	1.8	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	47.50	0.00	0.00

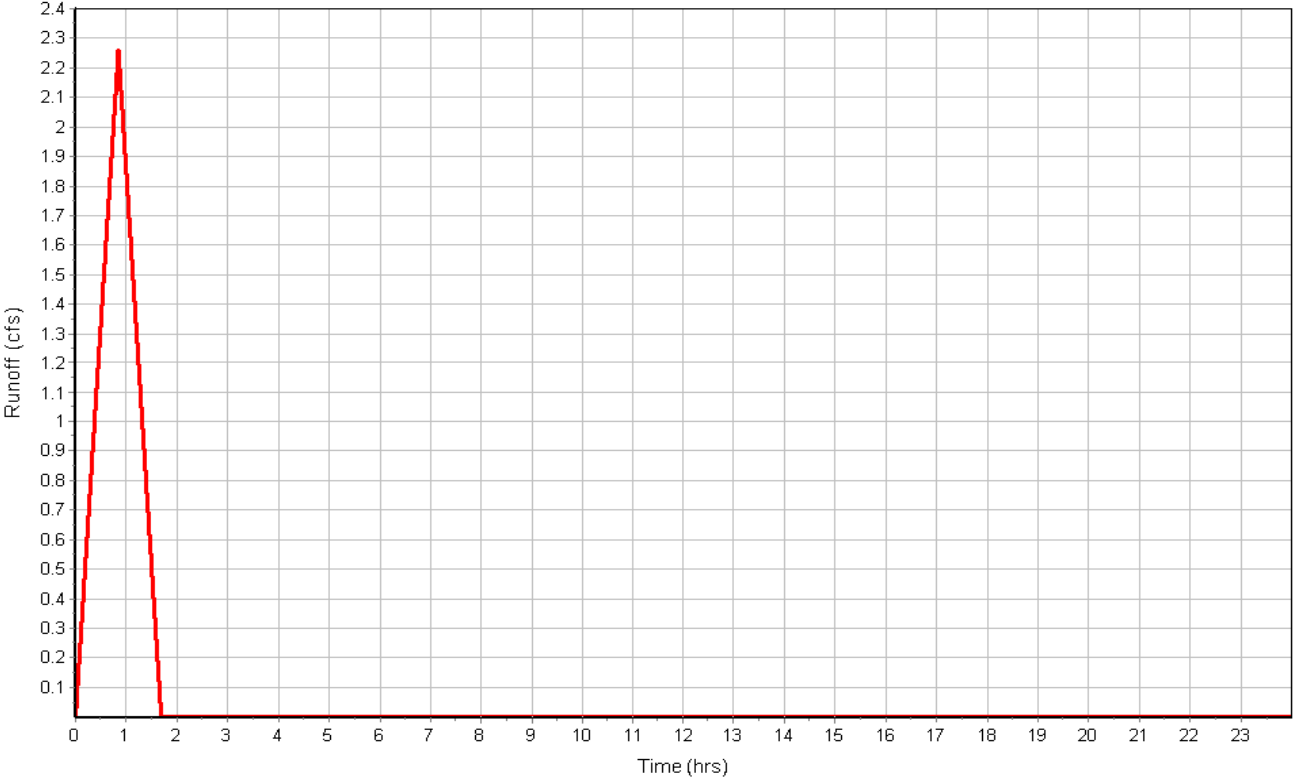
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	533.67	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	3.10	0.00	0.00
Total TOC (min)	50.60		

Subbasin Runoff Results

Total Rainfall (in) 3.16
 Total Runoff (in) 1.99
 Peak Runoff (cfs) 2.26
 Rainfall Intensity 3.738
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:50:36

Subbasin : {STORM-BASINS}.2

Runoff Hydrograph



Subbasin : {STORM-BASINS}.20

Input Data

Area (ac) 0.19
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.19	-	0.90
Composite Area & Weighted Runoff Coeff.	0.19		0.90

Time of Concentration

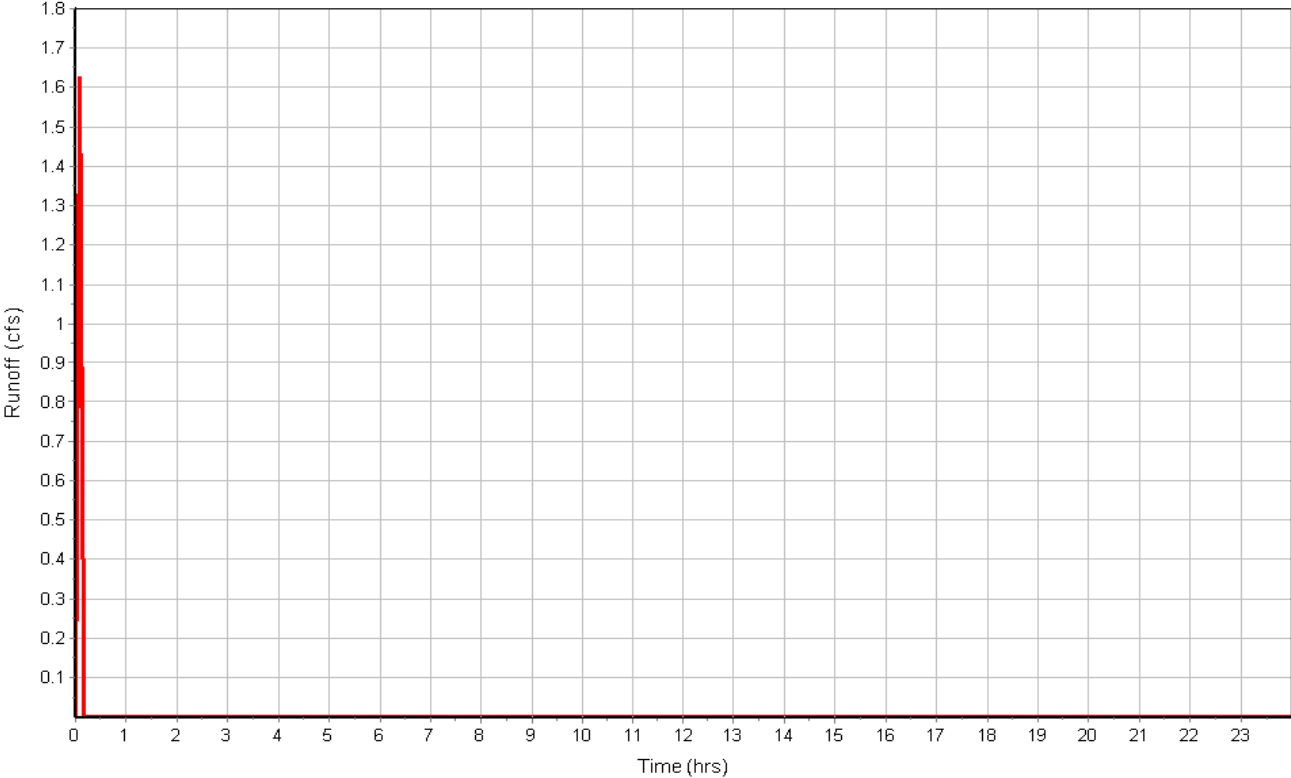
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	319.14	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.85	0.00	0.00
Total TOC (min)1.85			

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.70
Peak Runoff (cfs) 1.62
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:51

Subbasin : {STORM-BASINS}.20

Runoff Hydrograph



Subbasin : {STORM-BASINS}.21

Input Data

Area (ac) 0.22
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.90
Composite Area & Weighted Runoff Coeff.	0.22		0.90

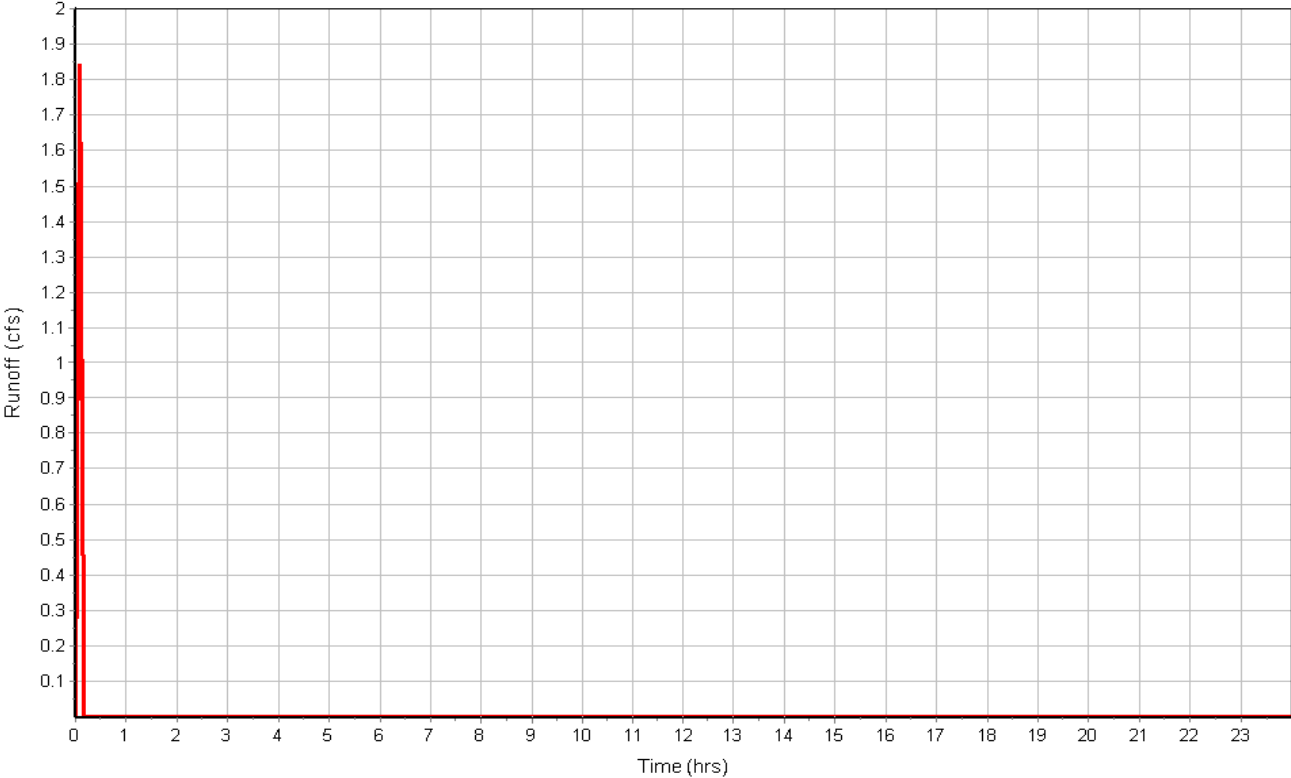
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.70
Peak Runoff (cfs) 1.84
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.21

Runoff Hydrograph



Subbasin : {STORM-BASINS}.22

Input Data

Area (ac) 0.20
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.20	-	0.90
Composite Area & Weighted Runoff Coeff.	0.20		0.90

Time of Concentration

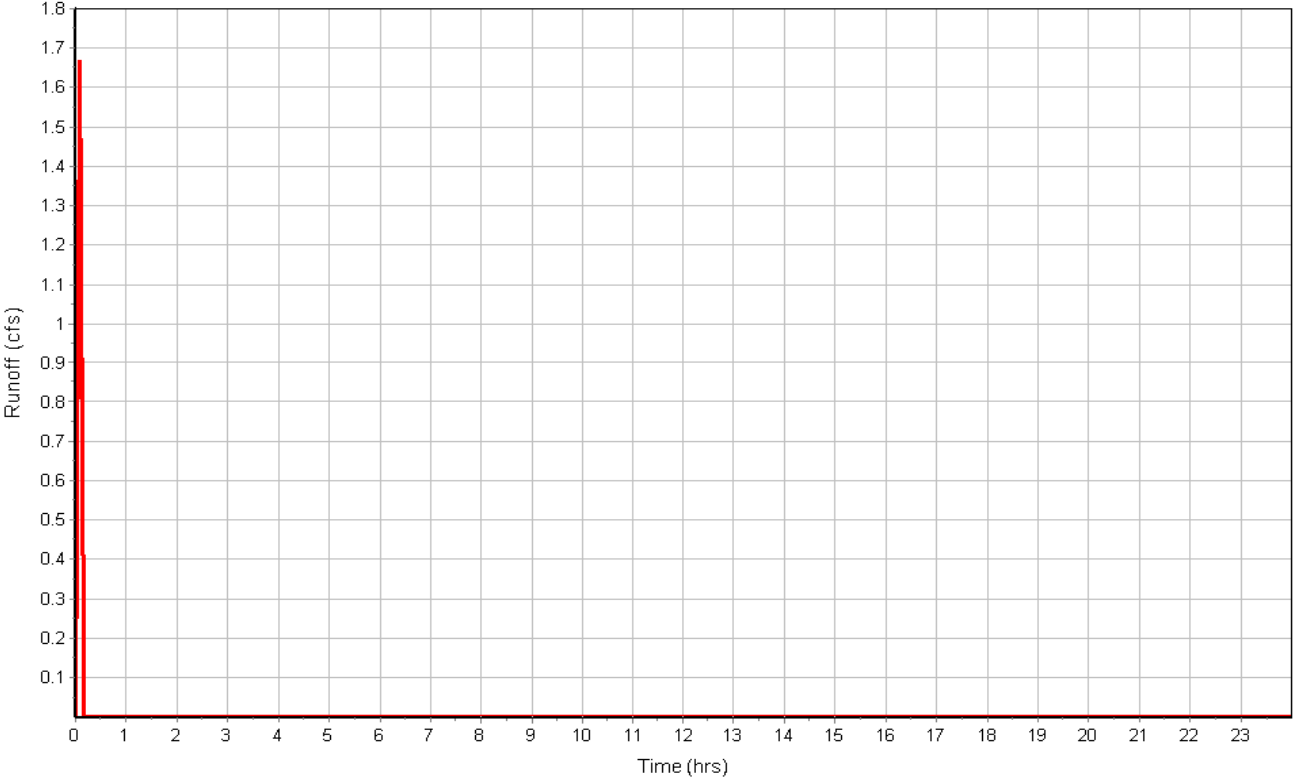
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	364.92	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	1.73	0.00	0.00
Total TOC (min)	1.73		

Subbasin Runoff Results

Total Rainfall (in) 0.78
 Total Runoff (in) 0.70
 Peak Runoff (cfs) 1.67
 Rainfall Intensity 9.300
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:44

Subbasin : {STORM-BASINS}.22

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23A

Input Data

Area (ac) 0.88
Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.88	-	0.60
Composite Area & Weighted Runoff Coeff.	0.88		0.60

Time of Concentration

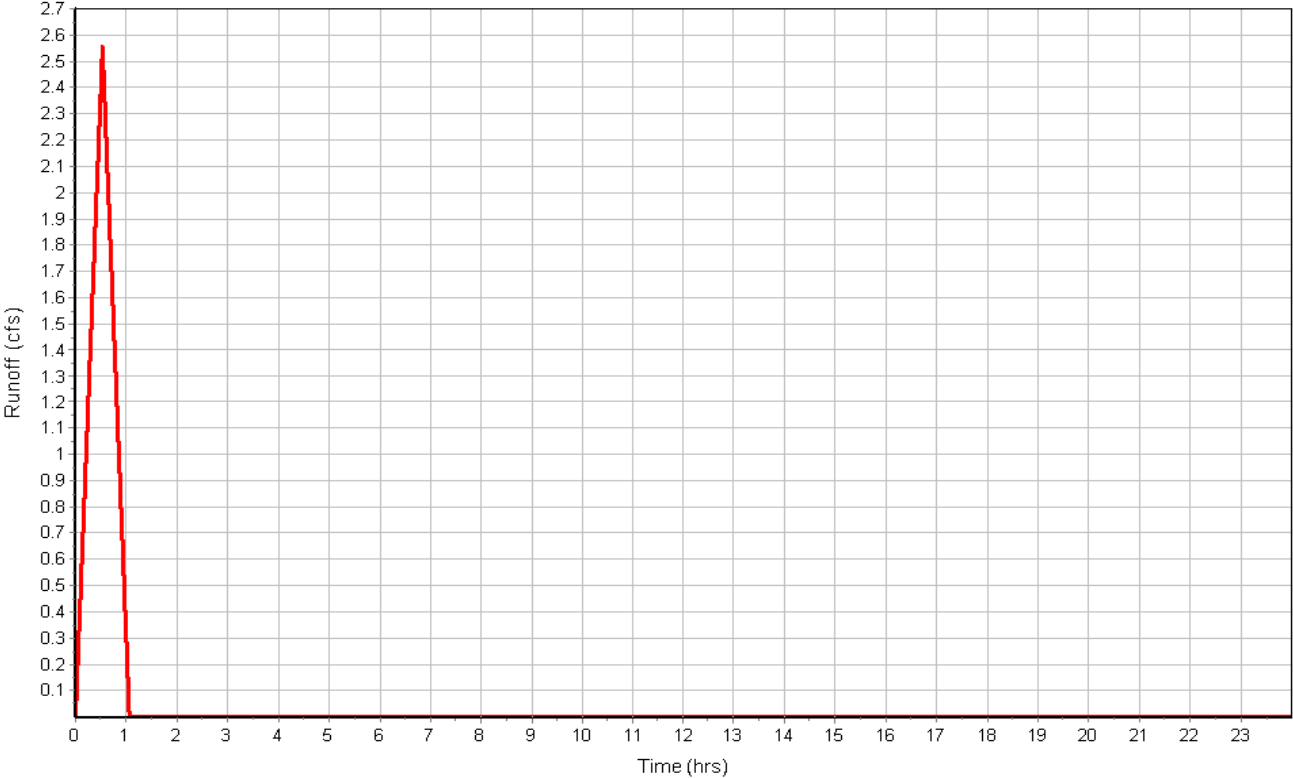
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	476.41	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.25	0.00	0.00
Computed Flow Time (min) :	31.91	0.00	0.00
Total TOC (min)	31.91		

Subbasin Runoff Results

Total Rainfall (in) 2.56
Total Runoff (in) 1.54
Peak Runoff (cfs) 2.55
Rainfall Intensity 4.831
Weighted Runoff Coefficient 0.6000
Time of Concentration (days hh:mm:ss) 0 00:31:55

Subbasin : {STORM-BASINS}.23A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23B

Input Data

Area (ac) 0.21
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.21	-	0.90
Composite Area & Weighted Runoff Coeff.	0.21		0.90

Time of Concentration

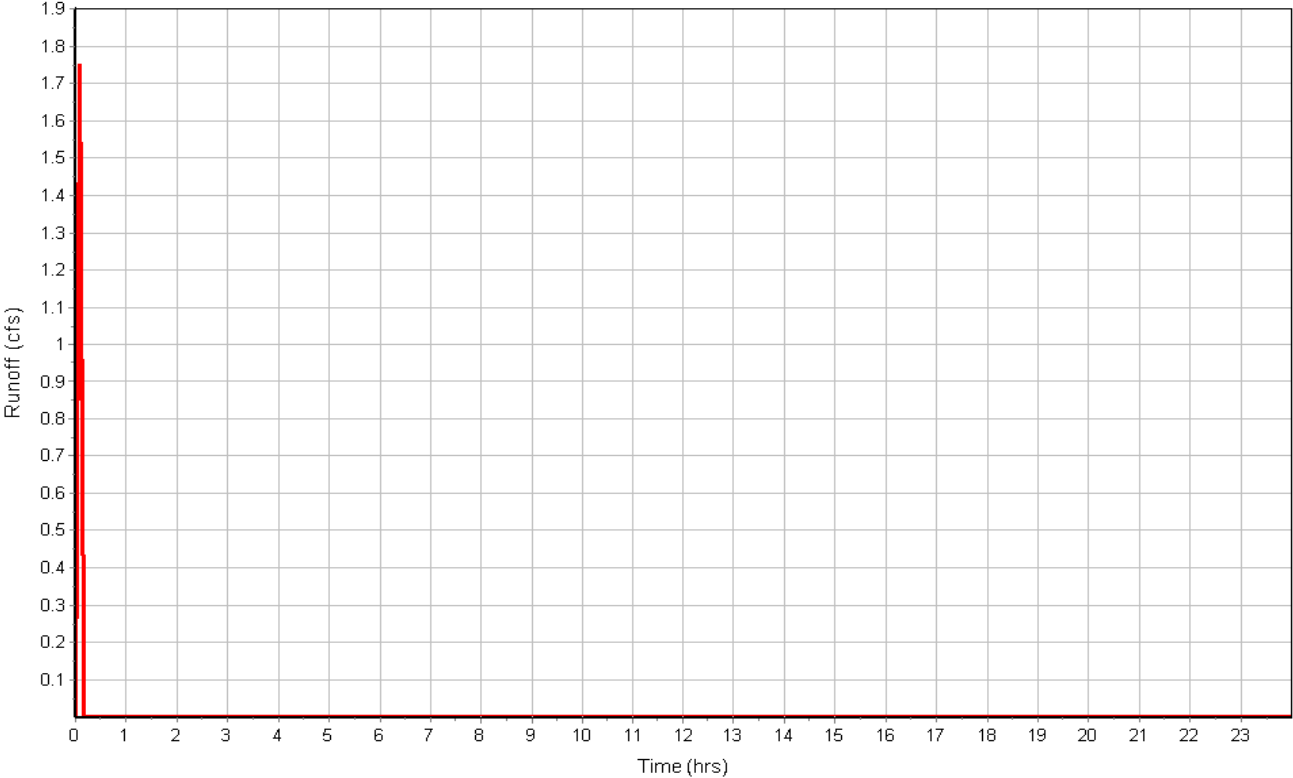
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	294.20	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.71	0.00	0.00
Total TOC (min)	1.71		

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.70
Peak Runoff (cfs) 1.75
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:43

Subbasin : {STORM-BASINS}.23B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.26

Input Data

Area (ac) 1.06
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.06	-	0.60
Composite Area & Weighted Runoff Coeff.	1.06		0.60

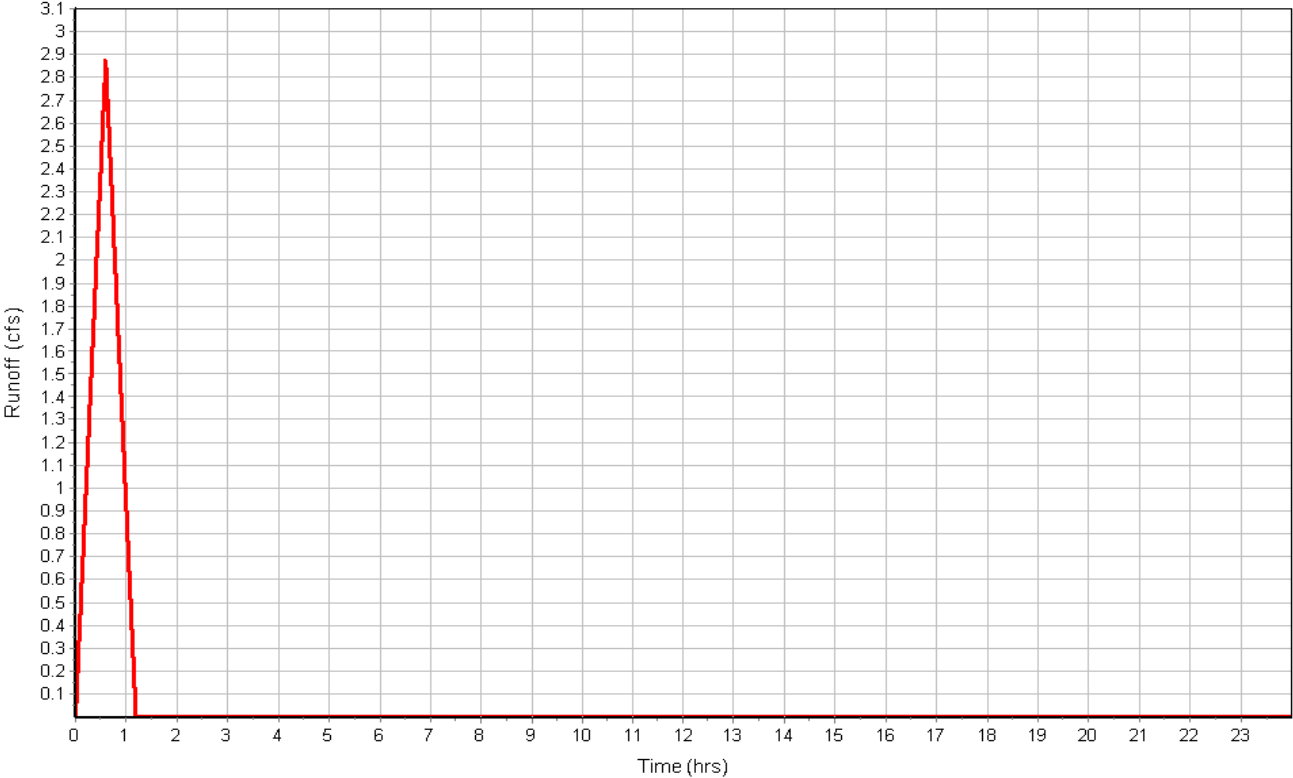
Time of Concentration

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	361.33	0.00	0.00
Slope (%) :	1.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.17	0.00	0.00
Computed Flow Time (min) :	35.74	0.00	0.00
Total TOC (min)	35.74		

Subbasin Runoff Results

Total Rainfall (in) 2.70
 Total Runoff (in) 1.62
 Peak Runoff (cfs) 2.87
 Rainfall Intensity 4.536
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:35:44

Runoff Hydrograph



Subbasin : {STORM-BASINS}.27

Input Data

Area (ac) 0.58
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.72
Composite Area & Weighted Runoff Coeff.	0.58		0.72

Time of Concentration

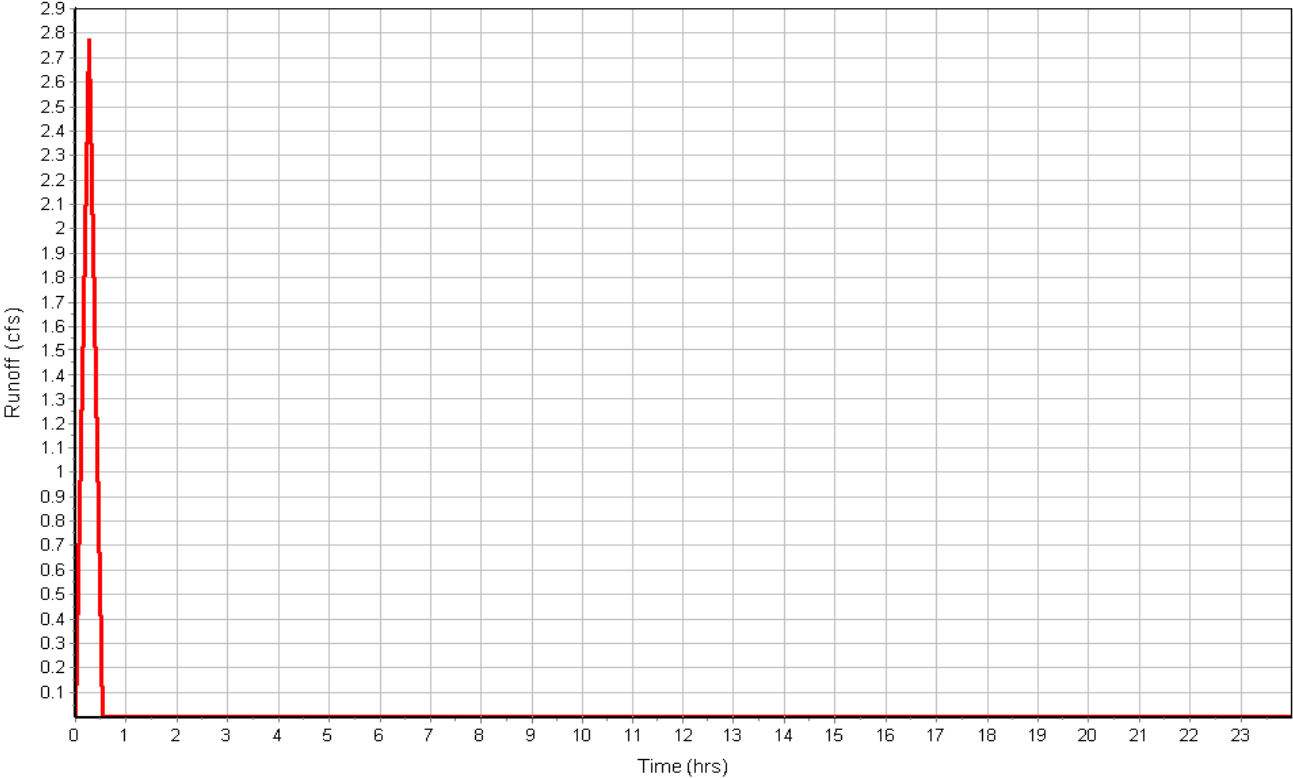
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00
Total TOC (min)	15.94		

Subbasin Runoff Results

Total Rainfall (in) 1.77
 Total Runoff (in) 1.27
 Peak Runoff (cfs) 2.77
 Rainfall Intensity 6.619
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:15:56

Subbasin : {STORM-BASINS}.27

Runoff Hydrograph



Subbasin : {STORM-BASINS}.28

Input Data

Area (ac) 0.22
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.72
Composite Area & Weighted Runoff Coeff.	0.22		0.72

Time of Concentration

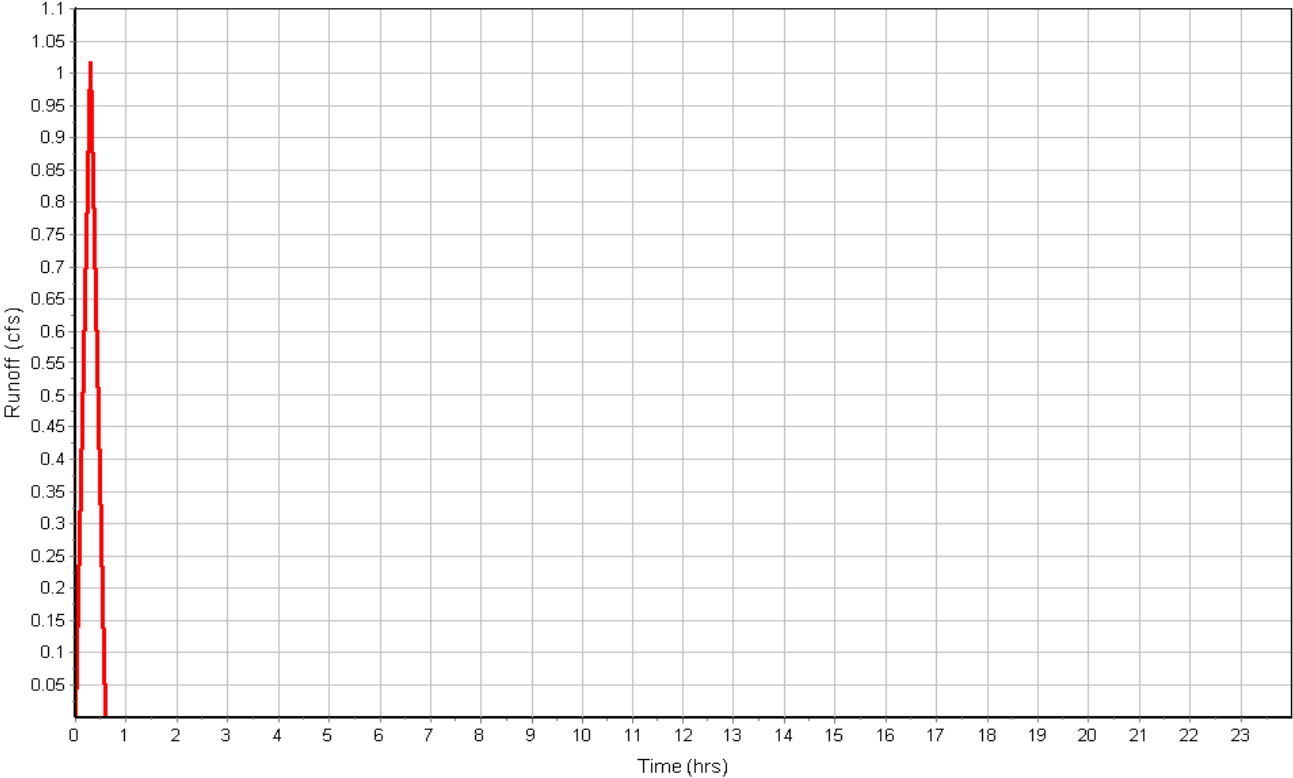
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	185	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.18	0.00	0.00
Computed Flow Time (min) :	17.61	0.00	0.00
Total TOC (min)17.61			

Subbasin Runoff Results

Total Rainfall (in) 1.87
 Total Runoff (in) 1.34
 Peak Runoff (cfs) 1.02
 Rainfall Intensity 6.333
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:17:37

Subbasin : {STORM-BASINS}.28

Runoff Hydrograph



Subbasin : {STORM-BASINS}.29

Input Data

Area (ac) 0.15
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.15	-	0.90
Composite Area & Weighted Runoff Coeff.	0.15		0.90

Time of Concentration

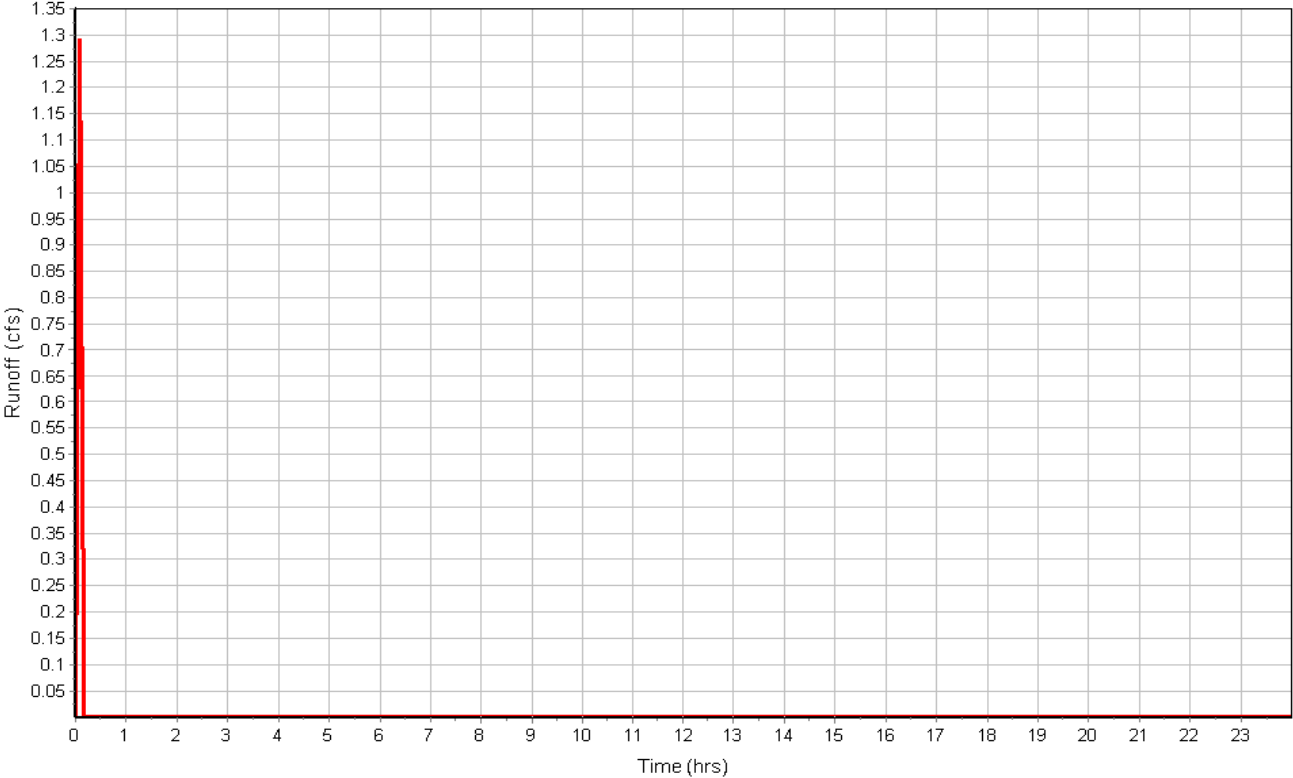
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	223.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.30	0.00	0.00
Total TOC (min)1.30			

Subbasin Runoff Results

Total Rainfall (in) 0.78
 Total Runoff (in) 0.70
 Peak Runoff (cfs) 1.29
 Rainfall Intensity 9.300
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:18

Subbasin : {STORM-BASINS}.29

Runoff Hydrograph



Subbasin : {STORM-BASINS}.3

Input Data

Area (ac) 1.34
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.20	-	0.60
-	0.13	-	0.90
Composite Area & Weighted Runoff Coeff.	1.33		0.63

Time of Concentration

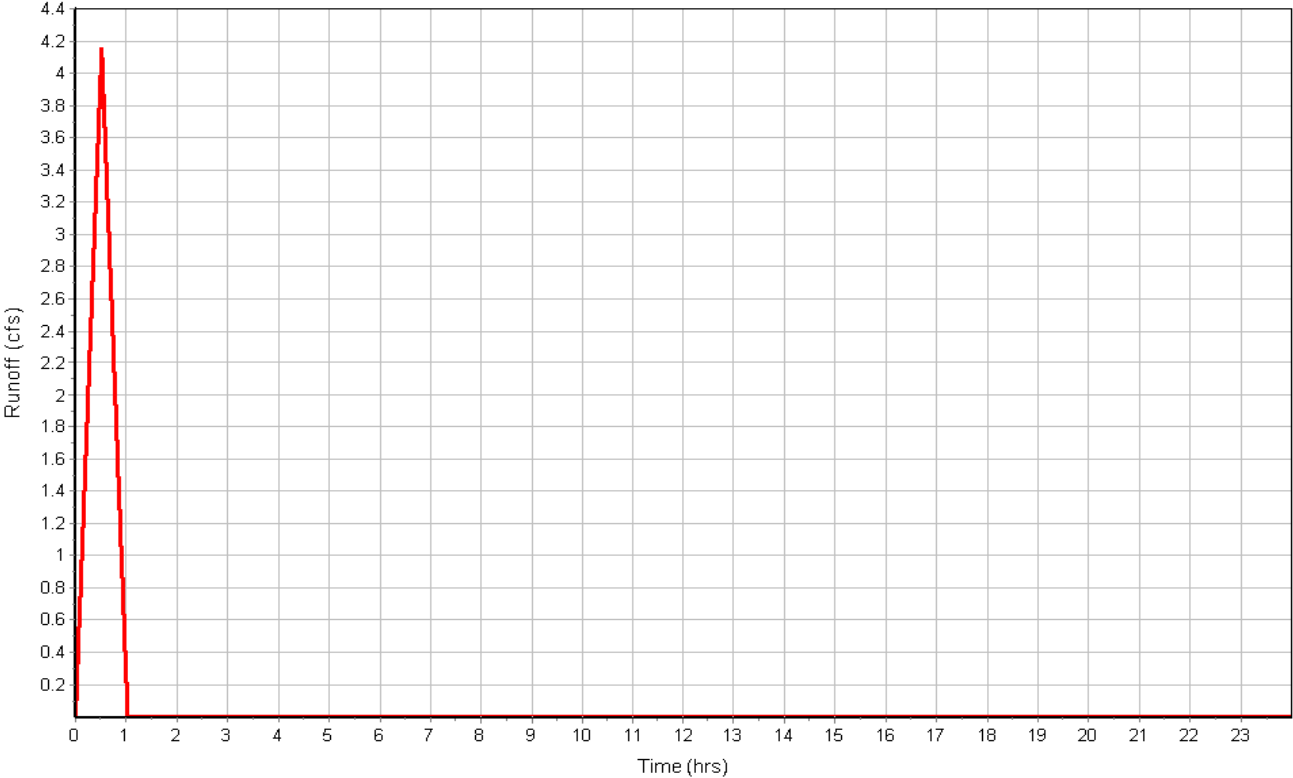
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	545.09	0.00	0.00
Slope (%) :	4.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	30.78	0.00	0.00
Total TOC (min)	30.78		

Subbasin Runoff Results

Total Rainfall (in) 2.53
 Total Runoff (in) 1.60
 Peak Runoff (cfs) 4.15
 Rainfall Intensity 4.929
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:30:47

Subbasin : {STORM-BASINS}.3

Runoff Hydrograph



Subbasin : {STORM-BASINS}.30

Input Data

Area (ac) 0.12
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

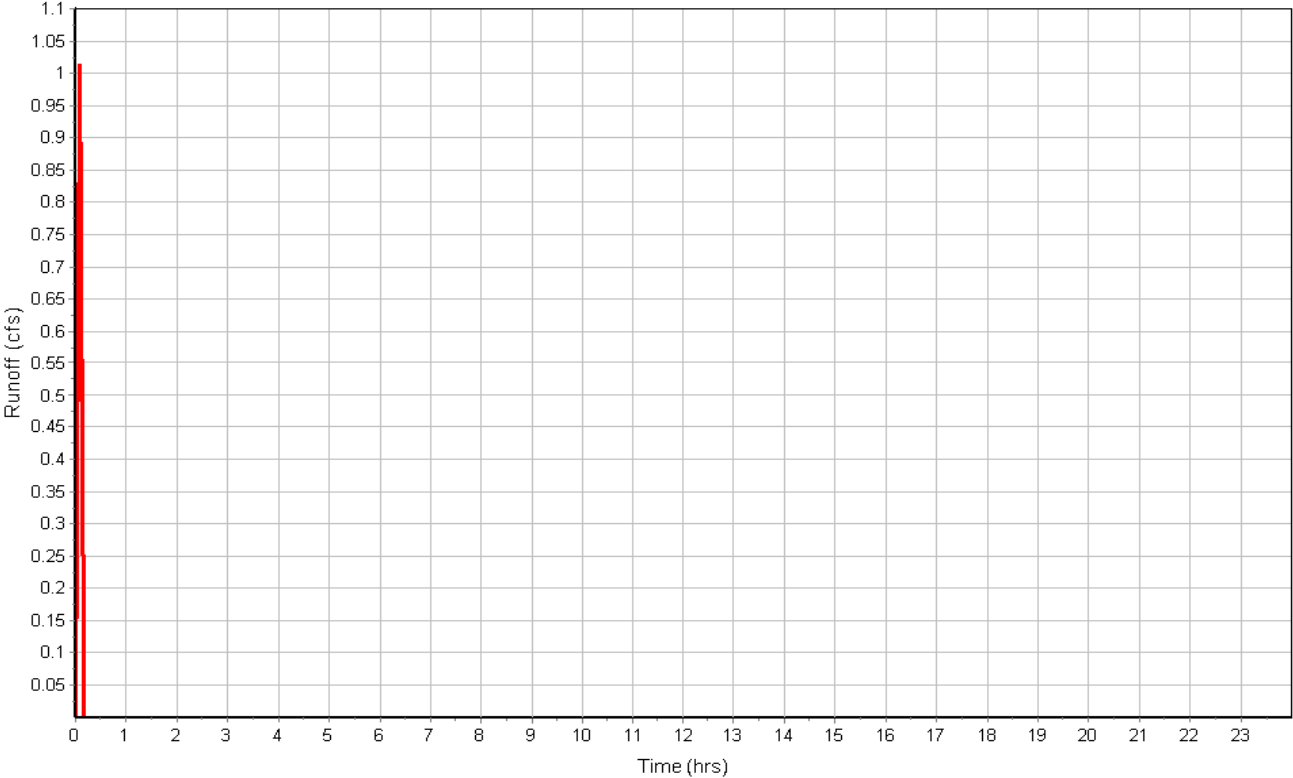
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	222.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.29	0.00	0.00
Total TOC (min)	1.29		

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.70
Peak Runoff (cfs) 1.01
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:17

Subbasin : {STORM-BASINS}.30

Runoff Hydrograph



Subbasin : {STORM-BASINS}.31

Input Data

Area (ac) 0.12
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

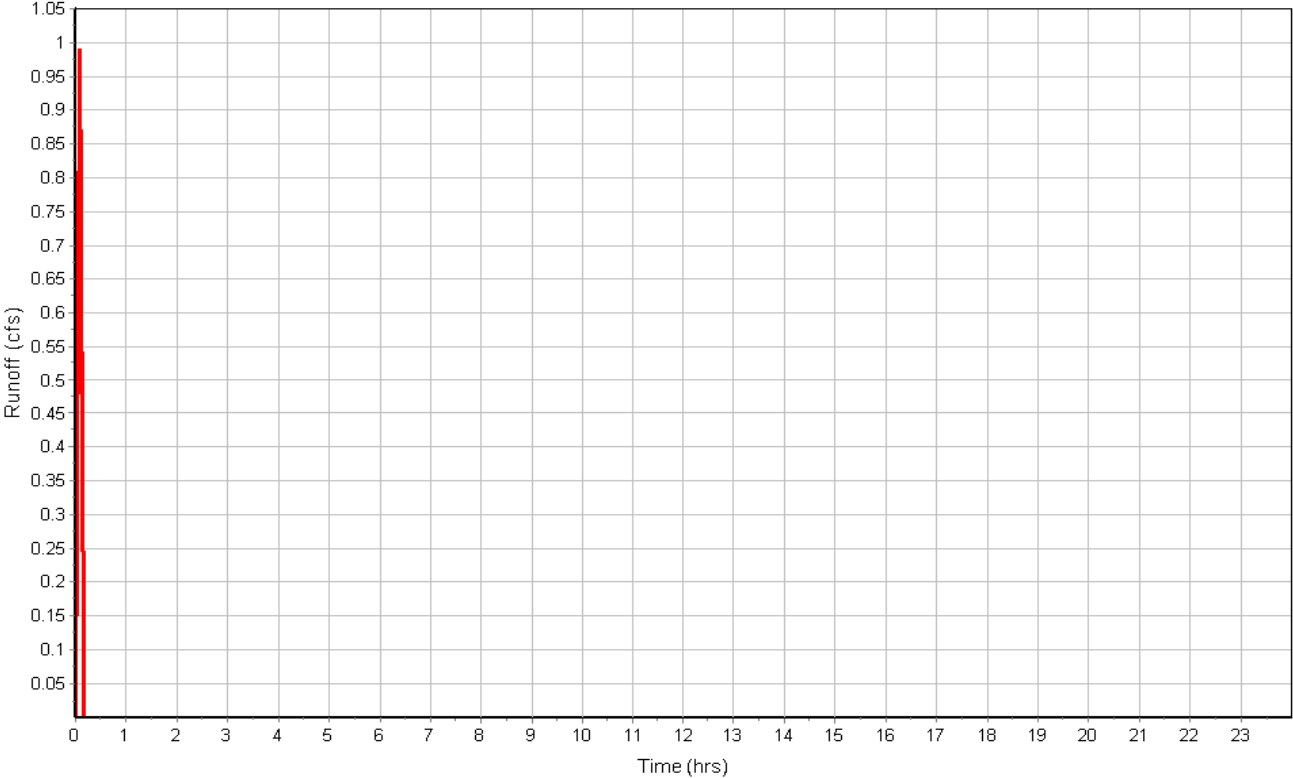
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	258.85	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.50	0.00	0.00
Total TOC (min)	1.50		

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.70
Peak Runoff (cfs) 0.99
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:30

Subbasin : {STORM-BASINS}.31

Runoff Hydrograph



Subbasin : {STORM-BASINS}.4

Input Data

Area (ac) 0.17
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.00	-	0.60
-	0.00	-	0.90
Composite Area & Weighted Runoff Coeff.	0.00		0.75

Time of Concentration

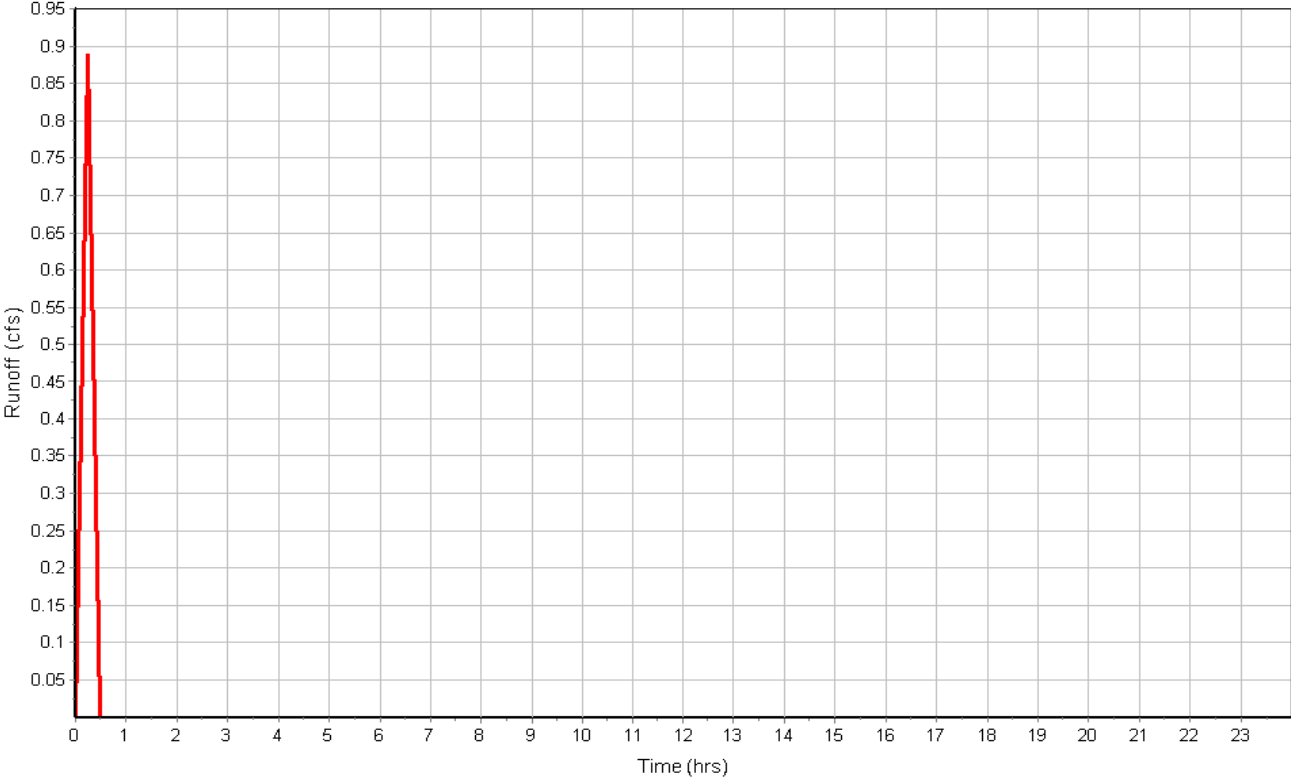
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	211.10	0.00	0.00
Slope (%) :	4.2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.24	0.00	0.00
Computed Flow Time (min) :	14.55	0.00	0.00
Total TOC (min)	14.55		

Subbasin Runoff Results

Total Rainfall (in) 1.66
 Total Runoff (in) 1.25
 Peak Runoff (cfs) 0.89
 Rainfall Intensity 6.884
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:14:33

Subbasin : {STORM-BASINS}.4

Runoff Hydrograph



Subbasin : {STORM-BASINS}.5

Input Data

Area (ac) 0.46
 Weighted Runoff Coefficient 0.6900

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.32	-	0.60
-	0.14	-	0.90
Composite Area & Weighted Runoff Coeff.	0.46		0.69

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	175.47	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	14.35	0.00	0.00

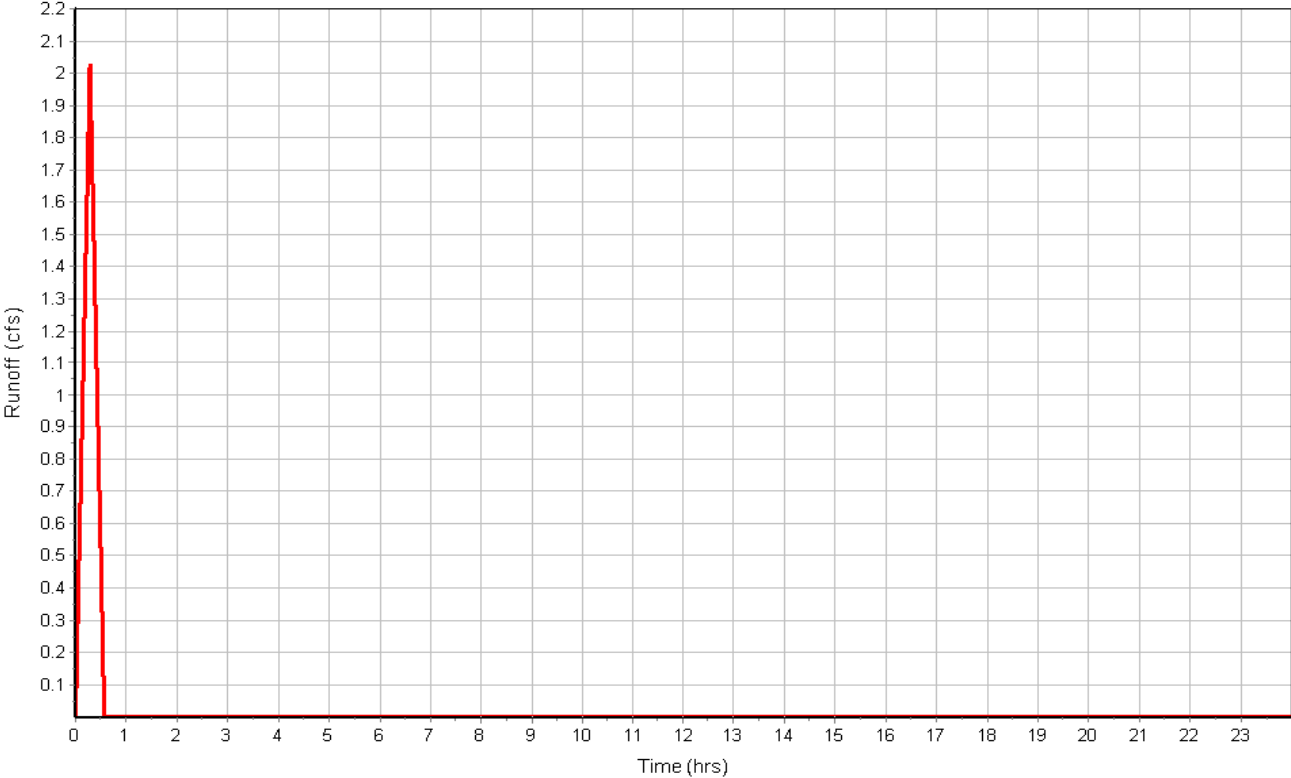
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	576.52	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	2.73	0.00	0.00
Total TOC (min)	17.08		

Subbasin Runoff Results

Total Rainfall (in) 1.82
 Total Runoff (in) 1.26
 Peak Runoff (cfs) 2.02
 Rainfall Intensity 6.419
 Weighted Runoff Coefficient 0.6900
 Time of Concentration (days hh:mm:ss) 0 00:17:05

Subbasin : {STORM-BASINS}.5

Runoff Hydrograph



Subbasin : {STORM-BASINS}.6

Input Data

Area (ac) 1.73
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.73	-	0.60
Composite Area & Weighted Runoff Coeff.	1.73		0.60

Time of Concentration

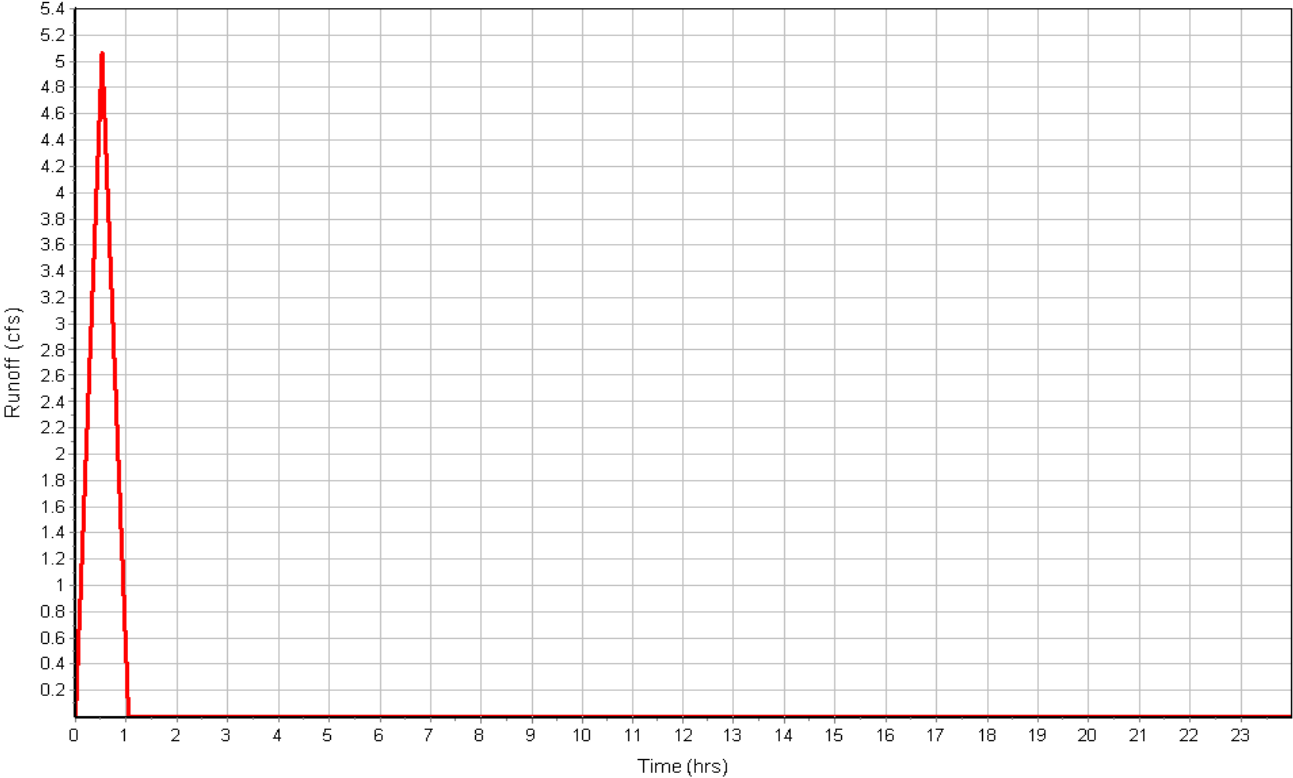
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	501.59	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	31.27	0.00	0.00
Total TOC (min)	31.27		

Subbasin Runoff Results

Total Rainfall (in) 2.55
 Total Runoff (in) 1.53
 Peak Runoff (cfs) 5.06
 Rainfall Intensity 4.886
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:31:16

Subbasin : {STORM-BASINS}.6

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7A

Input Data

Area (ac) 0.38
 Weighted Runoff Coefficient 0.6600

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.30	-	0.60
-	0.08	-	0.90
Composite Area & Weighted Runoff Coeff.	0.38		0.66

Time of Concentration

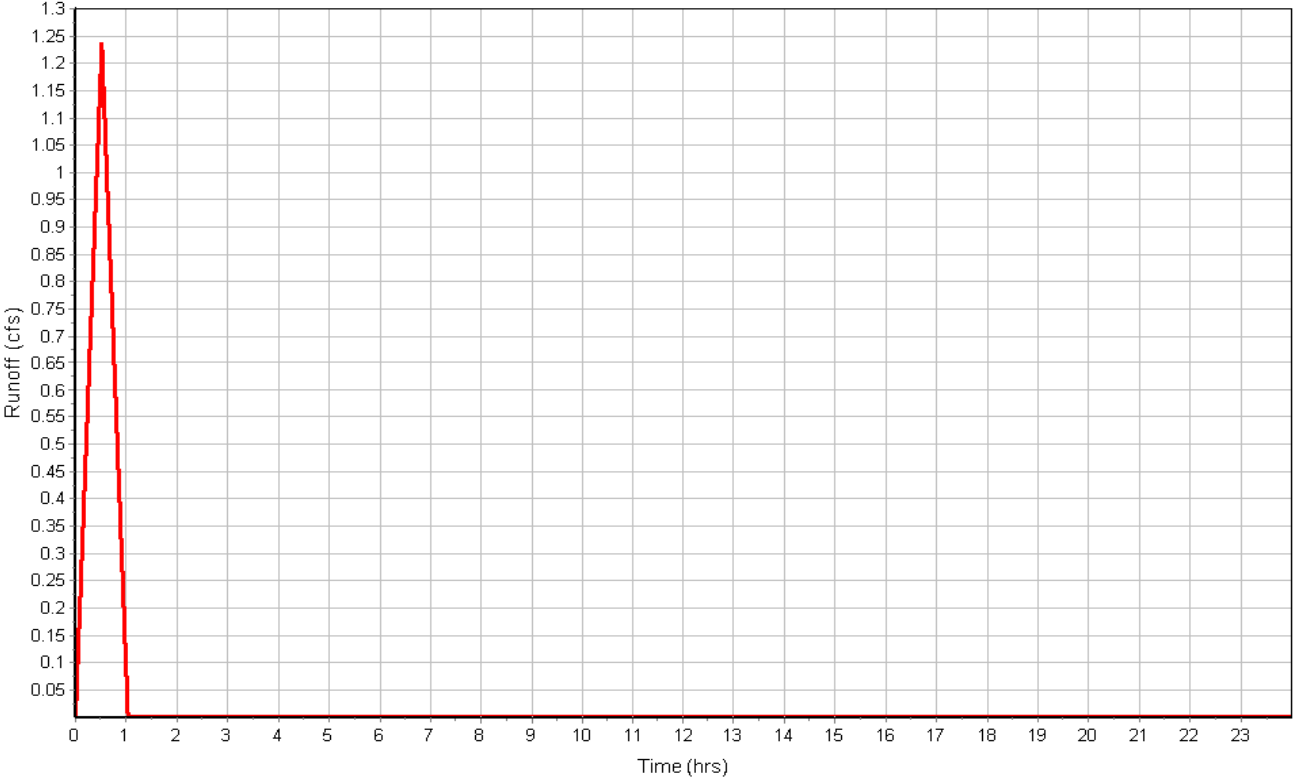
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	419.02	0.00	0.00
Slope (%) :	2.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.23	0.00	0.00
Computed Flow Time (min) :	30.98	0.00	0.00
Total TOC (min)	30.98		

Subbasin Runoff Results

Total Rainfall (in) 2.54
 Total Runoff (in) 1.68
 Peak Runoff (cfs) 1.24
 Rainfall Intensity 4.911
 Weighted Runoff Coefficient 0.6600
 Time of Concentration (days hh:mm:ss) 0 00:30:59

Subbasin : {STORM-BASINS}.7A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7B

Input Data

Area (ac) 0.28
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.17	-	0.60
-	0.11	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.72

Time of Concentration

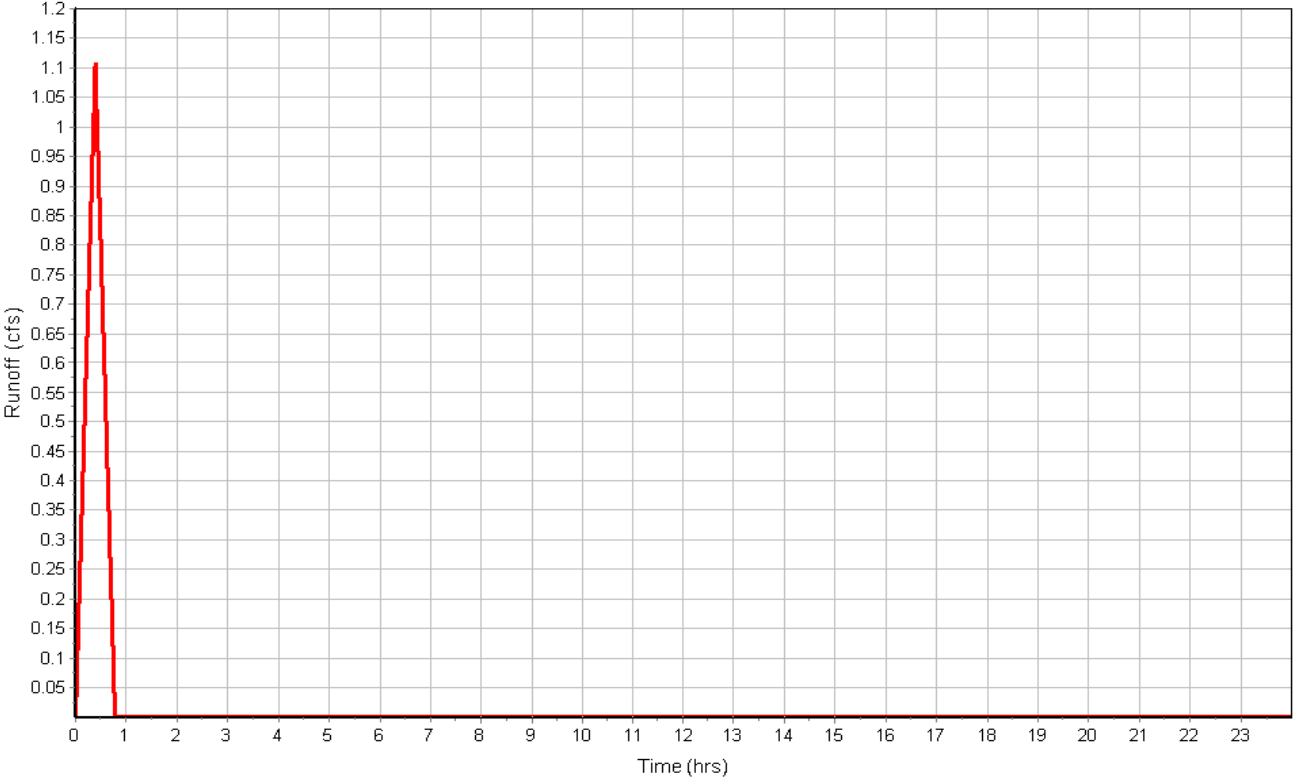
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	282.86	0.00	0.00
Slope (%) :	2.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	23.39	0.00	0.00
Total TOC (min)	23.39		

Subbasin Runoff Results

Total Rainfall (in) 2.17
 Total Runoff (in) 1.56
 Peak Runoff (cfs) 1.11
 Rainfall Intensity 5.584
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:23:23

Subbasin : {STORM-BASINS}.7B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.8

Input Data

Area (ac) 2.66
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	2.66	-	0.60
Composite Area & Weighted Runoff Coeff.	2.66		0.60

Time of Concentration

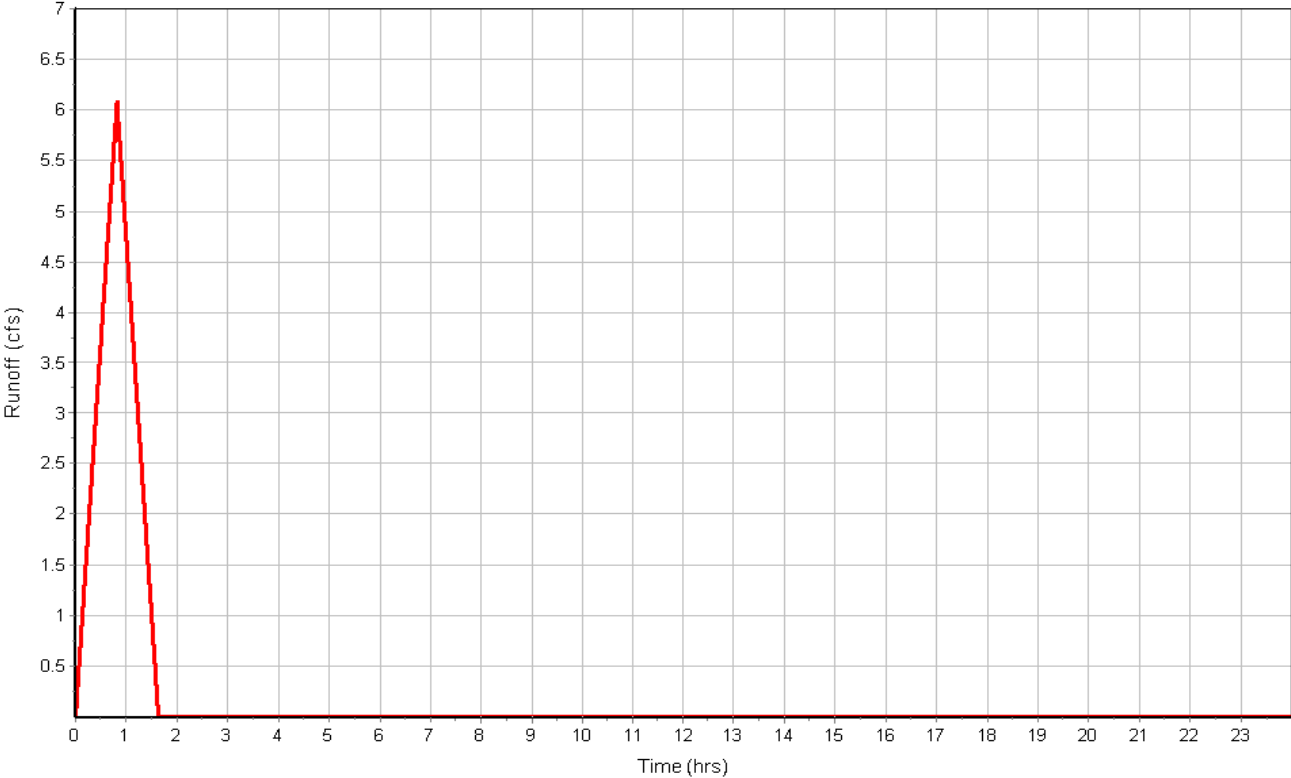
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	801.79	0.00	0.00
Slope (%) :	2.9	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	49.06	0.00	0.00
Total TOC (min)	49.06		

Subbasin Runoff Results

Total Rainfall (in) 3.11
 Total Runoff (in) 1.86
 Peak Runoff (cfs) 6.08
 Rainfall Intensity 3.803
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:49:04

Subbasin : {STORM-BASINS}.8

Runoff Hydrograph



Subbasin : {STORM-BASINS}.9

Input Data

Area (ac) 0.06
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.06	-	0.90
Composite Area & Weighted Runoff Coeff.	0.06		0.90

Time of Concentration

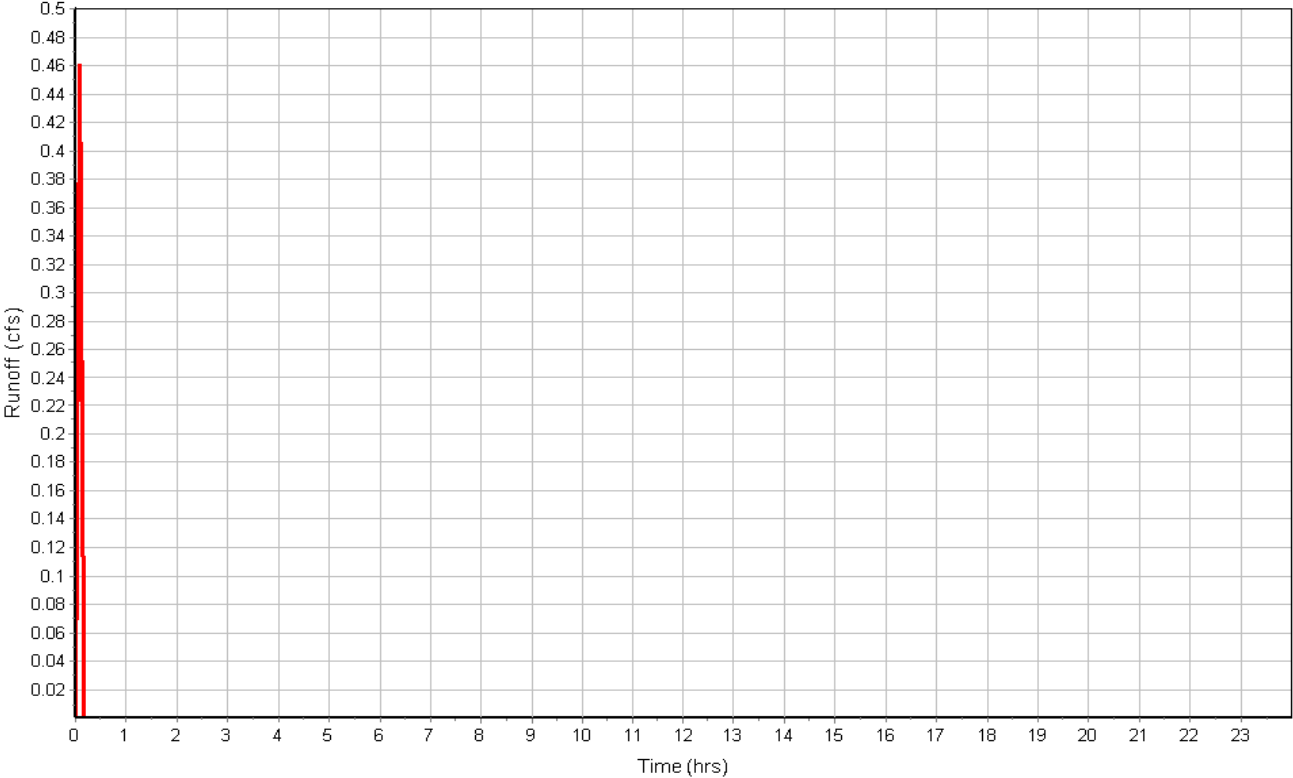
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	93.99	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	0.55	0.00	0.00
Total TOC (min)	0.55		

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.70
Peak Runoff (cfs) 0.46
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:33

Subbasin : {STORM-BASINS}.9

Runoff Hydrograph



Junction Input

SN Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft ²)	Minimum Pipe Cover (in)
1 CB-I1	476.43	480.49	4.06	476.43	0.00	480.49	0.00	0.00	24.66
2 CONNECT-G	483.22	485.22	2.00	483.22	0.00	485.22	-0.01	0.00	0.00
3 CONNECT-I	483.38	489.38	6.00	483.38	0.00	489.38	0.00	0.00	54.00
4 FES-H2	482.37	485.12	2.75	482.37	0.00	485.12	0.00	0.00	9.00
5 Jun-01	473.29	477.00	3.71	473.29	0.00	477.00	0.00	0.00	0.00

Junction Results

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 CB-I1	10.61	0.00	477.62	1.19	0.00	2.86	476.48	0.05	0 00:40	0 00:00	0.00	0.00
2 CONNECT-G	7.72	0.00	484.16	0.94	0.00	1.07	483.25	0.03	0 00:31	0 00:00	0.00	0.00
3 CONNECT-I	5.05	0.00	483.94	0.56	0.00	5.44	483.39	0.01	0 00:05	0 00:00	0.00	0.00
4 FES-H2	19.74	0.00	483.44	1.07	0.00	1.68	482.39	0.02	0 00:06	0 00:00	0.00	0.00
5 Jun-01	24.21	0.00	475.00	1.71	0.00	2.00	473.41	0.12	0 00:53	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	Gutter-05	200.35	495.00	4.05	487.00	2.90	8.00	3.9900	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Gutter-06	200.99	495.00	4.37	487.00	3.22	8.00	3.9800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Gutter-07	239.28	487.00	3.22	485.61	3.25	1.39	0.5800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Gutter-08	240.40	485.61	3.25	480.15	3.25	5.46	2.2700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Gutter-09	57.48	480.15	3.25	478.65	3.80	1.50	2.6100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Gutter-10	192.99	480.66	4.57	478.79	3.94	1.87	0.9700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Gutter-12	213.95	483.97	4.97	479.50	2.59	4.47	2.0900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Gutter-13	213.94	491.00	4.00	483.97	4.97	7.03	3.2900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Gutter-14	201.82	500.50	3.77	491.00	4.00	9.50	4.7100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Gutter-15	201.21	500.50	2.90	491.00	3.43	9.50	4.7200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Gutter-16	425.27	491.00	3.43	482.00	3.93	9.00	2.1200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Gutter-17	292.35	485.12	1.74	480.66	4.57	4.46	1.5200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Gutter-23	587.46	487.00	2.90	479.00	4.50	8.00	1.3600	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Gutter-26	57.06	490.37	6.49	485.12	1.74	5.25	9.2000	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 Gutter-05	0.43	0 00:16	9.52	0.05	3.44	0.97	0.15	0.31	0.00		
2 Gutter-06	1.25	0 00:18	9.50	0.13	3.98	0.84	0.23	0.46	0.00		
3 Gutter-07	1.26	0 00:33	3.83	0.33	1.85	2.16	0.32	0.65	0.00		
4 Gutter-08	0.05	0 00:37	7.18	0.01	1.93	2.08	0.07	0.14	0.00		
5 Gutter-09	0.00	0 00:00	7.33	0.00	0.00		0.00	0.00	0.00		
6 Gutter-10	0.22	0 00:07	4.69	0.05	2.52	1.28	0.15	0.29	0.00		
7 Gutter-12	0.14	0 00:30	6.51	0.02	1.99	1.79	0.11	0.23	0.00		
8 Gutter-13	0.00	0 00:00	9.03	0.00	0.00		0.00	0.00	0.00		
9 Gutter-14	0.16	0 00:06	10.29	0.02	4.01	0.84	0.10	0.20	0.00		
10 Gutter-15	0.40	0 00:06	10.48	0.04	4.65	0.72	0.14	0.28	0.00		
11 Gutter-16	0.00	0 00:06	7.04	0.00	0.00		0.00	0.01	0.00		
12 Gutter-17	0.29	0 00:20	5.88	0.05	2.28	2.14	0.15	0.31	0.00		
13 Gutter-23	0.56	0 00:36	5.55	0.10	2.75	3.56	0.20	0.41	0.00		
14 Gutter-26	1.08	0 00:16	14.45	0.07	3.44	0.28	0.19	0.37	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	ST-C1	92.51	483.78	0.00	483.22	0.00	0.56	0.6000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
2	ST-C2	200.00	490.63	0.00	483.88	0.10	6.75	3.3800	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	ST-C3	32.02	490.95	0.00	490.63	0.00	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	ST-CS1	24.64	473.29	0.00	473.16	0.00	0.13	0.5300	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5	ST-D1	32.02	484.10	0.00	483.88	0.10	0.22	0.6900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6	ST-E1 (2)	133.90	487.00	0.00	483.38	0.00	3.62	2.7000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
7	ST-E2 (EXIST)	200.00	496.73	0.00	487.10	0.10	9.63	4.8100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8	ST-E3 (EXIST)	32.02	497.60	0.00	496.83	0.10	0.77	2.4000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9	ST-F1 (EXIST)	32.02	487.57	0.00	487.10	0.10	0.47	1.4600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10	ST-G1	72.10	474.50	0.00	473.92	0.63	0.58	0.8000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11	ST-G2	31.99	474.85	0.00	474.50	0.00	0.35	1.0900	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12	ST-G3	49.09	476.90	0.00	474.95	0.10	1.95	3.9700	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13	ST-G4	238.61	482.36	0.00	476.90	0.00	5.46	2.2900	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14	ST-G5	145.74	483.22	0.00	482.35	-0.01	0.88	0.6000	CIRCULAR	24.000	24.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
15	ST-H1	190.63	476.09	0.00	474.95	0.10	1.14	0.6000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
16	ST-H2	252.90	482.37	0.00	476.19	0.10	6.18	2.4400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17	ST-H2A	37.10	483.38	0.00	482.37	0.00	1.01	2.7200	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18	ST-H3	48.08	483.88	0.00	483.38	0.00	0.50	1.0400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19	ST-H5	378.49	485.87	0.00	483.98	0.10	1.89	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20	ST-H6	32.00	488.21	0.00	487.89	2.02	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21	ST-I1	48.08	476.43	0.00	476.19	0.10	0.24	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22	ST-I2	95.00	476.91	0.00	476.43	0.00	0.48	0.5100	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23	ST-I3	212.56	479.00	0.00	477.00	0.09	2.00	0.9400	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24	ST-I4	78.66	483.38	0.00	481.27	2.27	2.11	2.6900	CIRCULAR	18.000	18.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
25	ST-K1	32.05	477.32	-0.75	477.00	0.09	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 ST-C1	7.72	0 00:31	17.52	0.44	5.40	0.29	0.93	0.46	0.00		Calculated
2 ST-C2	1.11	0 00:17	19.30	0.06	7.23	0.46	0.24	0.16	0.00		Calculated
3 ST-C3	0.43	0 00:14	10.50	0.04	2.93	0.18	0.21	0.14	0.00		Calculated
4 ST-CS1	24.21	0 00:53	29.79	0.81	6.76	0.06	1.71	0.68	0.00		Calculated
5 ST-D1	3.47	0 00:31	8.71	0.40	4.65	0.11	0.66	0.44	0.00		Calculated
6 ST-E1 (2)	5.05	0 00:05	17.26	0.29	8.51	0.26	0.56	0.37	0.00		Calculated
7 ST-E2 (EXIST)	2.49	0 00:05	23.05	0.11	8.60	0.39	0.33	0.22	0.00		Calculated
8 ST-E3 (EXIST)	1.38	0 00:05	16.27	0.08	6.54	0.08	0.30	0.20	0.00		Calculated
9 ST-F1 (EXIST)	1.61	0 00:05	12.70	0.13	4.93	0.11	0.36	0.24	0.00		Calculated
10 ST-G1	36.19	0 00:06	36.79	0.98	8.58	0.14	2.01	0.81	0.00		Calculated
11 ST-G2	33.77	0 00:06	42.90	0.79	9.69	0.06	1.67	0.67	0.00		Calculated
12 ST-G3	10.74	0 00:31	45.08	0.24	11.76	0.07	0.66	0.33	0.00		Calculated
13 ST-G4	10.03	0 00:32	34.22	0.29	9.47	0.42	0.74	0.37	0.00		Calculated
14 ST-G5	7.71	0 00:31	17.44	0.44	5.39	0.45	0.93	0.47	0.00		Calculated
15 ST-H1	29.91	0 00:06	31.72	0.94	7.49	0.42	1.93	0.77	0.00		Calculated
16 ST-H2	19.56	0 00:06	35.36	0.55	11.62	0.36	1.06	0.53	0.00		Calculated
17 ST-H2A	19.74	0 00:06	37.32	0.53	12.05	0.05	1.03	0.52	0.00		Calculated
18 ST-H3	18.52	0 00:06	23.11	0.80	8.22	0.10	1.35	0.68	0.00		Calculated
19 ST-H5	16.92	0 00:05	16.01	1.06	6.30	1.00	1.79	0.90	0.00		> CAPACITY
20 ST-H6	5.12	0 00:35	10.50	0.49	5.91	0.09	0.74	0.49	0.00		Calculated
21 ST-I1	10.61	0 00:40	16.00	0.66	5.44	0.15	1.19	0.60	0.00		Calculated
22 ST-I2	10.61	0 00:40	16.08	0.66	5.47	0.29	1.19	0.59	0.00		Calculated
23 ST-I3	5.58	0 00:06	10.19	0.55	5.97	0.59	0.79	0.53	0.00		Calculated
24 ST-I4	5.05	0 00:05	17.22	0.29	8.47	0.15	0.56	0.37	0.00		Calculated
25 ST-K1	9.01	0 00:40	19.20	0.47	10.69	0.05	0.72	0.48	0.00		Calculated

Inlet Input

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft²)	Grate Clogging Factor (%)	
1 CB-C1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.78	487.16	3.38	483.78	0.00	N/A	0.00
2 CB-C2 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	490.63	495.14	4.51	490.63	0.00	N/A	0.00
3 CB-C3 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	490.95	495.16	4.21	490.95	0.00	N/A	0.00
4 CB-D1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	484.10	487.17	3.07	484.10	0.00	N/A	0.00
5 CB-E1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	487.00	491.64	4.64	487.00	0.00	N/A	0.00
6 CB-E2 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	496.73	501.05	4.32	496.73	0.00	N/A	0.00
7 CB-E3 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	497.60	501.00	3.41	497.60	0.00	N/A	0.00
8 CB-F1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	487.57	491.28	3.71	487.57	0.00	N/A	0.00
9 CB-G2	FHWA HEC-22	GENERIC	N/A	On Sag	1	474.50	479.18	4.68	474.50	0.00	0.00	0.00
10 CB-G3	FHWA HEC-22	GENERIC	N/A	On Sag	1	474.85	478.79	3.94	474.85	0.00	0.00	0.00
11 CB-G4	FHWA HEC-22	GENERIC	N/A	On Grade	1	476.90	480.15	3.25	476.90	0.00	N/A	0.00
12 CB-G5	FHWA HEC-22	GENERIC	N/A	On Grade	1	482.36	485.61	3.25	482.36	0.00	N/A	0.00
13 CB-H1	FHWA HEC-22	GENERIC	N/A	On Grade	1	476.09	480.66	4.57	476.09	0.00	N/A	0.00
14 CB-H2	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.38	485.12	1.74	483.38	0.00	N/A	0.00
15 CB-H3	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.88	490.37	6.49	483.88	0.00	N/A	0.00
16 CB-H5	FHWA HEC-22	GENERIC	N/A	On Sag	1	485.87	488.55	2.68	485.87	0.00	0.00	0.00
17 CB-H6	FHWA HEC-22	GENERIC	N/A	On Sag	1	488.21	488.55	0.35	488.21	0.00	0.00	0.00
18 CB-I2	FHWA HEC-22	GENERIC	N/A	On Sag	1	476.91	479.97	3.06	476.91	0.00	0.00	0.00
19 CB-I3	FHWA HEC-22	GENERIC	N/A	On Grade	1	479.00	483.97	4.97	479.00	0.00	N/A	0.00
20 CB-K1	FHWA HEC-22	GENERIC	N/A	On Sag	1	478.07	482.00	3.93	478.07	0.00	0.00	0.00

Roadway & Gutter Input

SN Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1 CB-C1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
2 CB-C2 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
3 CB-C3 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
4 CB-D1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
5 CB-E1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
6 CB-E2 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
7 CB-E3 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
8 CB-F1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
9 CB-G2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
10 CB-G3	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
11 CB-G4	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
12 CB-G5	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
13 CB-H1	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
14 CB-H2	0.0100	0.0200	0.0160	0.0620	1.50	0.1969	12.00
15 CB-H3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
16 CB-H5	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
17 CB-H6	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
18 CB-I2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
19 CB-I3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
20 CB-K1	N/A	0.0200	0.0130	0.0833	1.50	0.1969	12.00

Inlet Results

SN Element ID	Peak Flow	Peak Lateral Inflow	Peak Flow Intercepted by Inlet	Peak Flow Bypassing Inlet	Inlet Efficiency during Peak	Max Gutter Spread during Peak	Max Gutter Water Elev. during Peak	Max Gutter Water Depth during Peak	Time of Max Depth Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)
1 CB-C1 (EXIST)	5.31	5.06	4.00	1.31	75.34	10.60	487.43	0.27	0 00:31	0.00	0.00
2 CB-C2 (EXIST)	2.02	2.02	0.73	1.30	35.93	4.14	495.37	0.23	0 00:17	0.00	0.00
3 CB-C3 (EXIST)	0.89	0.89	0.43	0.45	48.82	2.91	495.33	0.17	0 00:14	0.00	0.00
4 CB-D1 (EXIST)	4.18	4.15	3.47	0.71	83.03	9.62	487.42	0.26	0 00:31	0.00	0.00
5 CB-E1 (EXIST)	0.98	0.96	0.98	0.00	100.00	5.12	491.81	0.17	0 00:05	0.00	0.00
6 CB-E2 (EXIST)	1.37	1.37	1.13	0.24	82.34	5.96	501.23	0.18	0 00:05	0.00	0.00
7 CB-E3 (EXIST)	1.93	1.93	1.39	0.54	71.96	6.94	501.21	0.20	0 00:05	0.00	0.00
8 CB-F1 (EXIST)	1.61	1.44	1.61	0.00	100.00	6.42	491.47	0.19	0 00:05	0.00	0.00
9 CB-G2	3.51	3.51	N/A	N/A	N/A	10.56	479.96	0.77	0 00:06	0.00	0.00
10 CB-G3	6.08	6.08	N/A	N/A	N/A	15.26	479.66	0.87	0 00:06	0.00	0.00
11 CB-G4	1.11	1.11	1.11	0.00	100.00	5.39	480.32	0.17	0 00:32	0.00	0.00
12 CB-G5	2.42	1.24	2.36	0.06	97.62	7.66	485.83	0.22	0 00:31	0.00	0.00
13 CB-H1	1.62	1.62	1.26	0.37	77.29	6.44	480.85	0.19	0 00:06	0.00	0.00
14 CB-H2	2.01	1.02	1.65	0.36	82.17	8.95	485.36	0.24	0 00:06	0.00	0.00
15 CB-H3	2.77	2.77	1.68	1.09	60.71	8.11	490.59	0.23	0 00:05	0.00	0.00
16 CB-H5	13.53	13.53	N/A	N/A	N/A	25.90	489.63	1.08	0 00:26	0.00	0.00
17 CB-H6	5.12	5.12	N/A	N/A	N/A	13.61	489.39	0.84	0 00:01	0.00	0.00
18 CB-I2	0.46	0.46	N/A	N/A	N/A	2.11	480.27	0.30	0 00:40	0.00	0.00
19 CB-I3	2.87	2.87	2.69	0.17	93.99	8.23	484.19	0.23	0 00:05	0.00	0.00
20 CB-K1	9.01	9.01	N/A	N/A	N/A	19.85	482.99	0.99	0 00:40	0.00	0.00

Storage Nodes

Storage Node : POND1

Input Data

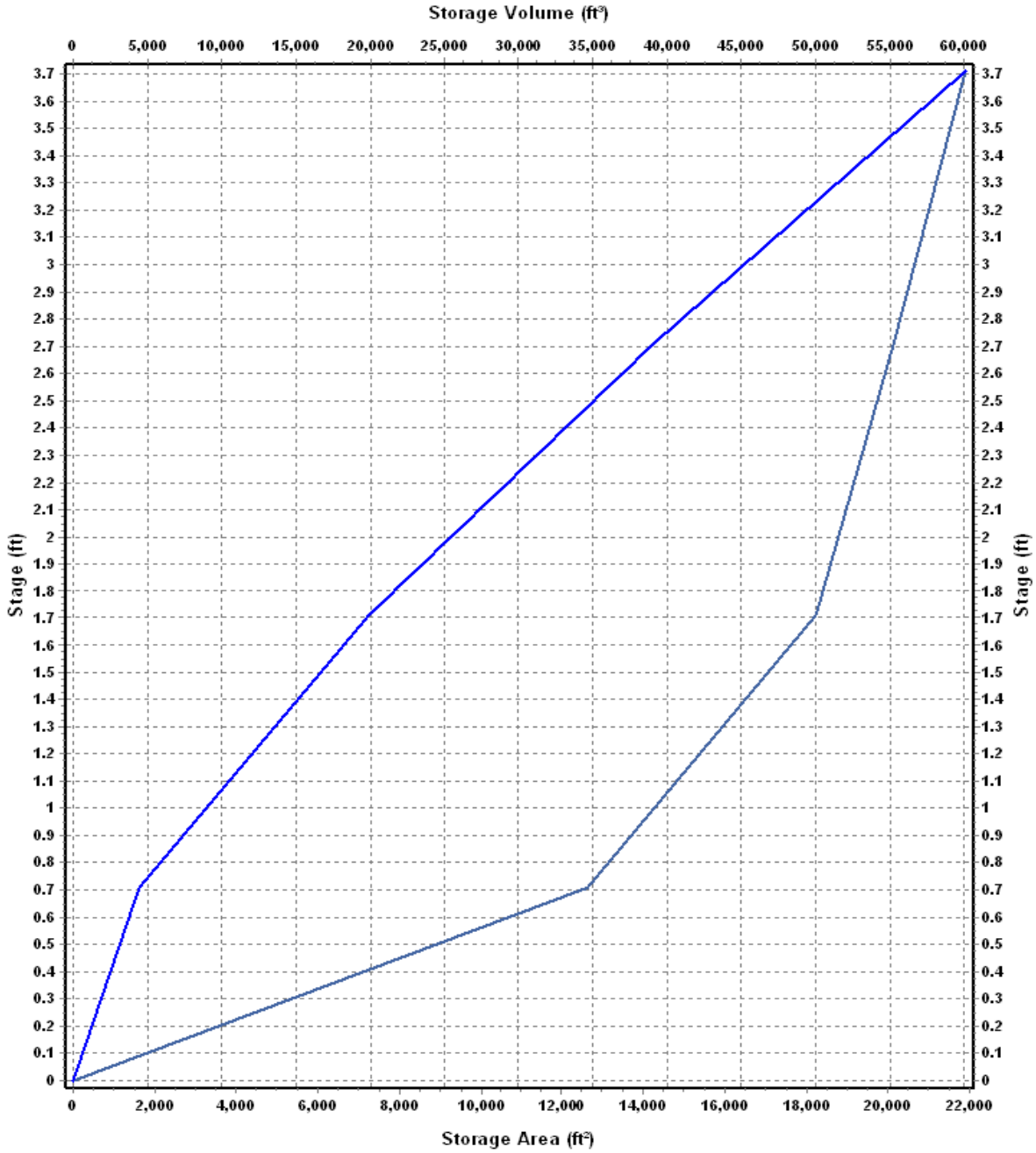
Invert Elevation (ft)	473.29
Max (Rim) Elevation (ft)	477.00
Max (Rim) Offset (ft)	3.71
Initial Water Elevation (ft)	473.29
Initial Water Depth (ft)	0.00
Ponded Area (ft ²)	0.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : POND1

Stage (ft)	Storage Area (ft ²)	Storage Volume (ft ³)
0	0	0.000
0.71	12615	4478.33
1.71	18216	19893.83
2.71	20116	39059.83
3.71	21896	60065.83

Storage Area Volume Curves



— Storage Area — Storage Volume

Storage Node : POND1 (continued)

Outflow Weirs

SN Element ID	Weir Type	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1 Weir-02	Rectangular	No	476.00	2.71	15.00	1.00	3.33

Outflow Orifices

SN Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1 Orifice-01	Side	Rectangular	No		26.50	21.00	0.00	0.63

Output Summary Results

Peak Inflow (cfs)	36.61
Peak Lateral Inflow (cfs)	4.40
Peak Outflow (cfs)	24.21
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	475.95
Max HGL Depth Attained (ft)	2.66
Average HGL Elevation Attained (ft)	473.46
Average HGL Depth Attained (ft)	0.17
Time of Max HGL Occurrence (days hh:mm)	0 00:53
Total Exfiltration Volume (1000-ft ³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Project Description

File Name 16044 Kensington Place Ph 2 Drainage Post-Dev 100 YEAR.SPF
Description J:\Projects\2016 Projects\16044 Kensington Place Subdivision Lee Pengelly\Drawings\DWG\Phase 2\KENSINGTON PLACE PHASE 2 R4.dwg

Project Options

Flow Units CFS
Elevation Type Elevation
Hydrology Method Rational
Time of Concentration (TOC) Method SCS TR-55
Link Routing Method Kinematic Wave
Enable Overflow Ponding at Nodes YES
Skip Steady State Analysis Time Periods NO

Analysis Options

Start Analysis On Aug 18, 2017 00:00:00
End Analysis On Aug 19, 2017 00:00:00
Start Reporting On Aug 18, 2017 00:00:00
Antecedent Dry Days 0 days
Runoff (Dry Weather) Time Step 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step 0 00:05:00 days hh:mm:ss
Reporting Time Step 0 00:05:00 days hh:mm:ss
Routing Time Step 30 seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins.....	31
Nodes.....	28
<i>Junctions</i>	5
<i>Outfalls</i>	2
<i>Flow Diversions</i>	0
<i>Inlets</i>	20
<i>Storage Nodes</i>	1
Links.....	41
<i>Channels</i>	14
<i>Pipes</i>	25
<i>Pumps</i>	0
<i>Orifices</i>	1
<i>Weirs</i>	1
<i>Outlets</i>	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period..... 100 year(s)

Subbasin Summary

SN Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1 (STORM-BASINS).1	2.38	0.6100	4.08	2.49	5.92	4.94	0 01:11:46
2 (STORM-BASINS).10	0.87	0.6300	2.69	1.70	1.48	3.27	0 00:27:10
3 (STORM-BASINS).11	0.12	0.9000	0.83	0.75	0.09	1.04	0 00:05:00
4 (STORM-BASINS).12	0.16	0.9000	0.83	0.75	0.12	1.48	0 00:05:00
5 (STORM-BASINS).13	0.23	0.9000	0.83	0.75	0.17	2.07	0 00:05:00
6 (STORM-BASINS).14	0.74	0.7200	0.83	0.60	0.44	5.31	0 00:05:00
7 (STORM-BASINS).15	1.28	0.7200	0.83	0.60	0.77	9.25	0 00:05:00
8 (STORM-BASINS).16	0.21	0.7500	0.83	0.63	0.13	1.55	0 00:05:00
9 (STORM-BASINS).17	0.28	0.9000	0.83	0.75	0.21	2.48	0 00:05:00
10 (STORM-BASINS).18	3.51	0.6000	3.21	1.93	6.76	10.19	0 00:39:45
11 (STORM-BASINS).19	0.05	0.9000	0.83	0.75	0.04	0.48	0 00:05:00
12 (STORM-BASINS).2	0.96	0.6300	3.55	2.23	2.14	2.54	0 00:50:36
13 (STORM-BASINS).20	0.19	0.9000	0.83	0.75	0.15	1.75	0 00:05:00
14 (STORM-BASINS).21	0.22	0.9000	0.83	0.75	0.17	1.98	0 00:05:00
15 (STORM-BASINS).22	0.20	0.9000	0.83	0.75	0.15	1.79	0 00:05:00
16 (STORM-BASINS).23A	0.88	0.6000	2.92	1.75	1.54	2.91	0 00:31:54
17 (STORM-BASINS).23B	0.21	0.9000	0.83	0.75	0.16	1.88	0 00:05:00
18 (STORM-BASINS).26	1.06	0.6000	3.06	1.84	1.94	3.26	0 00:35:44
19 (STORM-BASINS).27	0.58	0.7200	2.00	1.44	0.84	3.14	0 00:15:56
20 (STORM-BASINS).28	0.22	0.7200	2.12	1.52	0.34	1.15	0 00:17:36
21 (STORM-BASINS).29	0.15	0.9000	0.83	0.75	0.12	1.39	0 00:05:00
22 (STORM-BASINS).3	1.34	0.6300	2.89	1.82	2.43	4.73	0 00:30:46
23 (STORM-BASINS).30	0.12	0.9000	0.83	0.75	0.09	1.09	0 00:05:00
24 (STORM-BASINS).31	0.12	0.9000	0.83	0.75	0.09	1.06	0 00:05:00
25 (STORM-BASINS).4	0.17	0.7500	1.88	1.41	0.24	1.00	0 00:14:33
26 (STORM-BASINS).5	0.46	0.6900	2.06	1.42	0.65	2.30	0 00:17:04
27 (STORM-BASINS).6	1.73	0.6000	2.91	1.74	3.01	5.77	0 00:31:16
28 (STORM-BASINS).7A	0.38	0.6600	2.89	1.91	0.73	1.41	0 00:30:58
29 (STORM-BASINS).7B	0.28	0.7200	2.47	1.78	0.49	1.26	0 00:23:23
30 (STORM-BASINS).8	2.66	0.6000	3.49	2.10	5.58	6.83	0 00:49:03
31 (STORM-BASINS).9	0.06	0.9000	0.83	0.75	0.04	0.50	0 00:05:00

Node Summary

SN Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation	Ponded Area	Peak Inflow	Max HGL Elevation Attained	Max Surcharge Depth Attained	Min Freeboard	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded	
		(ft)	(ft)	(ft)	(ft)	(ft²)	(cfs)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)	
1	CB-I1	Junction	476.43	480.49	476.43	480.49	0.00	12.03	477.72	0.00	2.76	0 00:00	0.00	0.00
2	CONNECT-G	Junction	483.22	485.22	483.22	485.22	0.00	8.34	484.20	0.00	1.03	0 00:00	0.00	0.00
3	CONNECT-I	Junction	483.38	489.38	483.38	489.38	0.00	5.43	483.96	0.00	5.42	0 00:00	0.00	0.00
4	FES-H2	Junction	482.37	485.12	482.37	485.12	0.00	20.31	483.46	0.00	1.66	0 00:00	0.00	0.00
5	Jun-01	Junction	473.29	477.00	473.29	477.00	0.00	29.66	475.33	0.00	1.67	0 00:00	0.00	0.00
6	Out-01	Outfall	473.16					29.66	475.20					
7	Out-1ST-G3	Outfall	475.00					0.00	475.00					
8	POND1	Storage Node	473.29	477.00	473.29		0.00	40.21	476.18			0.00	0.00	

Link Summary

SN Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/Total Depth Ratio	Total Time Reported (min)	Condition
1	ST-C1	Pipe	CB-C1 (EXIST) CONNECT-G	92.51	483.78	483.22	0.6000	24.000	0.0130	8.34	17.52	0.48	5.51	0.97	0.49	0.00	Calculated
2	ST-C2	Pipe	CB-C2 (EXIST) CB-C1 (EXIST)	200.00	490.63	483.88	3.3800	18.000	0.0130	1.20	19.30	0.06	7.44	0.25	0.17	0.00	Calculated
3	ST-C3	Pipe	CB-C3 (EXIST) CB-C2 (EXIST)	32.02	490.95	490.63	1.0000	18.000	0.0130	0.47	10.50	0.04	3.04	0.22	0.14	0.00	Calculated
4	ST-CS1	Pipe	Jun-01 Out-01	24.64	473.29	473.16	0.5300	30.000	0.0130	29.66	29.79	1.00	6.92	2.04	0.82	0.00	Calculated
5	ST-D1	Pipe	CB-D1 (EXIST) CB-C1 (EXIST)	32.02	484.10	483.88	0.6900	18.000	0.0130	3.75	8.71	0.43	4.75	0.69	0.46	0.00	Calculated
6	ST-E1 (2)	Pipe	CB-E1 (EXIST) CONNECT-I	133.90	487.00	483.38	2.7000	18.000	0.0130	5.43	17.26	0.31	8.67	0.58	0.39	0.00	Calculated
7	ST-E2 (EXIST)	Pipe	CB-E2 (EXIST) CB-E1 (EXIST)	200.00	496.73	487.10	4.8100	18.000	0.0130	2.60	23.05	0.11	8.71	0.34	0.23	0.00	Calculated
8	ST-E3 (EXIST)	Pipe	CB-E3 (EXIST) CB-E2 (EXIST)	32.02	497.60	496.83	2.4000	18.000	0.0130	1.44	16.27	0.09	6.64	0.30	0.20	0.00	Calculated
9	ST-F1 (EXIST)	Pipe	CB-F1 (EXIST) CB-E1 (EXIST)	32.02	487.57	487.10	1.4600	18.000	0.0130	1.78	12.70	0.14	5.07	0.38	0.25	0.00	Calculated
10	ST-G1	Pipe	CB-G2 POND1	72.10	474.50	473.92	0.8000	30.000	0.0130	39.68	36.79	1.08	8.80	2.31	0.92	0.00	> CAPACITY
11	ST-G2	Pipe	CB-G3 CB-G2	31.99	474.85	474.50	1.0900	30.000	0.0130	36.11	42.90	0.84	9.80	1.76	0.70	0.00	Calculated
12	ST-G3	Pipe	CB-G4 CB-G3	49.09	476.90	474.95	3.9700	24.000	0.0130	12.00	45.08	0.27	12.14	0.70	0.35	0.00	Calculated
13	ST-G4	Pipe	CB-G5 CB-G4	238.61	482.36	476.90	2.2900	24.000	0.0130	11.09	34.22	0.32	9.73	0.78	0.39	0.00	Calculated
14	ST-G5	Pipe	CONNECT-G CB-G5	145.74	483.22	482.35	0.6000	24.000	0.0130	8.33	17.44	0.48	5.50	0.97	0.49	0.00	Calculated
15	ST-H1	Pipe	CB-H1 CB-G3	190.63	476.09	474.95	0.6000	30.000	0.0130	31.40	31.72	0.99	7.55	2.02	0.81	0.00	Calculated
16	ST-H2	Pipe	FES-H2 CB-H1	252.90	482.37	476.19	2.4400	24.000	0.0130	20.24	35.36	0.57	11.76	1.08	0.54	0.00	Calculated
17	ST-H2A	Pipe	CB-H2 FES-H2	37.10	483.38	482.37	2.7200	24.000	0.0130	20.31	37.32	0.54	12.14	1.05	0.53	0.00	Calculated
18	ST-H3	Pipe	CB-H3 CB-H2	48.08	483.88	483.38	1.0400	24.000	0.0130	18.96	23.11	0.82	8.23	1.38	0.69	0.00	Calculated
19	ST-H5	Pipe	CB-H5 CB-H3	378.49	485.87	483.98	0.5000	24.000	0.0130	17.31	16.01	1.08	6.39	1.85	0.92	0.00	> CAPACITY
20	ST-H6	Pipe	CB-H6 CB-H5	32.00	488.21	487.89	1.0000	18.000	0.0130	5.82	10.50	0.55	6.10	0.80	0.53	0.00	Calculated
21	ST-I1	Pipe	CB-I1 CB-H1	48.08	476.43	476.19	0.5000	24.000	0.0130	12.03	16.00	0.75	5.60	1.29	0.65	0.00	Calculated
22	ST-I2	Pipe	CB-I2 CB-I1	95.00	476.91	476.43	0.5100	24.000	0.0130	12.03	16.08	0.75	5.63	1.29	0.64	0.00	Calculated
23	ST-I3	Pipe	CB-I3 CB-I2	212.56	479.00	477.00	0.9400	18.000	0.0130	6.03	10.19	0.59	6.07	0.83	0.55	0.00	Calculated
24	ST-I4	Pipe	CONNECT-I CB-I3	78.66	483.38	481.27	2.6900	18.000	0.0130	5.42	17.22	0.31	8.64	0.58	0.39	0.00	Calculated
25	ST-K1	Pipe	CB-K1 CB-I2	32.05	477.32	477.00	1.0000	18.000	0.0130	10.19	19.20	0.53	11.02	0.78	0.52	0.00	Calculated
26	Gutter-05	Channel	CB-C3 (EXIST) CB-D1 (EXIST)	200.35	495.00	487.00	3.9900	6.000	0.0130	0.50	9.52	0.05	3.49	0.16	0.33	0.00	
27	Gutter-06	Channel	CB-C2 (EXIST) CB-C1 (EXIST)	200.99	495.00	487.00	3.9800	6.000	0.0130	1.46	9.50	0.15	4.07	0.24	0.49	0.00	
28	Gutter-07	Channel	CB-C1 (EXIST) CB-G5	239.28	487.00	485.61	0.5800	6.000	0.0130	1.69	3.83	0.44	1.93	0.36	0.72	0.00	
29	Gutter-08	Channel	CB-G5 CB-G4	240.40	485.61	480.15	2.2700	6.000	0.0320	0.20	7.18	0.03	2.40	0.13	0.25	0.00	
30	Gutter-09	Channel	CB-G4 CB-G3	57.48	480.15	478.65	2.6100	6.000	0.0320	0.00	7.33	0.00	0.00	0.00	0.00	0.00	
31	Gutter-10	Channel	CB-H1 CB-G3	192.99	480.66	478.79	0.9700	6.000	0.0320	0.28	4.69	0.06	2.64	0.16	0.32	0.00	
32	Gutter-12	Channel	CB-I3 CB-I2	213.95	483.97	479.50	2.0900	6.000	0.0320	0.26	6.51	0.04	2.10	0.15	0.29	0.00	
33	Gutter-13	Channel	CB-E1 (EXIST) CB-I3	213.94	491.00	483.97	3.2900	6.000	0.0320	0.00	9.03	0.00	0.00	0.00	0.00	0.00	
34	Gutter-14	Channel	CB-E2 (EXIST) CB-E1 (EXIST)	201.82	500.50	491.00	4.7100	6.000	0.0320	0.20	10.29	0.02	4.17	0.11	0.21	0.00	
35	Gutter-15	Channel	CB-E3 (EXIST) CB-F1 (EXIST)	201.21	500.50	491.00	4.7200	6.000	0.0320	0.48	10.48	0.05	4.77	0.15	0.30	0.00	
36	Gutter-16	Channel	CB-F1 (EXIST) CB-K1	425.27	491.00	482.00	2.1200	6.000	0.0320	0.00	7.04	0.00	0.00	0.00	0.01	0.00	
37	Gutter-17	Channel	CB-H2 CB-H1	292.35	485.12	480.66	1.5200	6.000	0.0320	0.47	5.88	0.08	2.45	0.19	0.37	0.00	
38	Gutter-23	Channel	CB-D1 (EXIST) CB-G2	587.46	487.00	479.00	1.3600	6.000	0.0320	0.84	5.55	0.15	2.90	0.24	0.48	0.00	
39	Gutter-26	Channel	CB-H3 CB-H2	57.06	490.37	485.12	9.2000	6.000	0.0320	1.33	14.45	0.09	3.51	0.20	0.41	0.00	
40	Orifice-01	Orifice	POND1 Jun-01		473.29	473.29		26.500		25.93							
41	Weir-02	Weir	POND1 Jun-01		473.29	473.29				3.73							

Inlet Summary

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft ²)	Peak Flow (cfs)	Peak Flow Intercepted (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	
1	CB-C1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.78	487.16	483.78	N/A	6.05	4.30	1.75	71.14	12.00	11.17	487.45
2	CB-C2 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	490.63	495.14	490.63	N/A	2.30	0.78	1.51	34.14	12.00	4.35	495.38
3	CB-C3 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	490.95	495.16	490.95	N/A	1.00	0.47	0.53	47.09	12.00	3.10	495.34
4	CB-D1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	484.10	487.17	484.10	N/A	4.76	3.76	1.01	78.85	12.00	10.14	487.43
5	CB-E1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.00	491.64	487.00	N/A	1.07	1.07	0.00	100.00	12.00	5.32	491.81
6	CB-E2 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	496.73	501.05	496.73	N/A	1.48	1.19	0.29	80.49	12.00	6.18	501.24
7	CB-E3 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	497.60	501.00	497.60	N/A	2.07	1.44	0.63	69.70	12.00	7.17	501.21
8	CB-F1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.57	491.28	487.57	N/A	1.78	1.78	0.00	99.99	12.00	6.70	491.47
9	CB-G2	FHWA HEC-22 GENERIC	N/A	On Sag	1	474.50	479.18	474.50	0.00	3.79	N/A	N/A	N/A	12.00	11.12	479.97
10	CB-G3	FHWA HEC-22 GENERIC	N/A	On Sag	1	474.85	478.79	474.85	0.00	6.83	N/A	N/A	N/A	12.00	16.50	479.68
11	CB-G4	FHWA HEC-22 GENERIC	N/A	On Grade	1	476.90	480.15	476.90	N/A	1.26	1.26	0.00	100.00	12.00	5.71	480.33
12	CB-G5	FHWA HEC-22 GENERIC	N/A	On Grade	1	482.36	485.61	482.36	N/A	3.02	2.80	0.22	92.80	12.00	8.42	485.85
13	CB-H1	FHWA HEC-22 GENERIC	N/A	On Grade	1	476.09	480.66	476.09	N/A	1.75	1.31	0.44	74.91	12.00	6.64	480.86
14	CB-H2	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.38	485.12	483.38	N/A	2.39	1.83	0.56	76.44	12.00	9.60	485.37
15	CB-H3	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.88	490.37	483.88	N/A	3.14	1.79	1.35	57.08	12.00	8.55	490.60
16	CB-H5	FHWA HEC-22 GENERIC	N/A	On Sag	1	485.87	488.55	485.87	0.00	14.55	N/A	N/A	N/A	12.00	27.05	489.66
17	CB-H6	FHWA HEC-22 GENERIC	N/A	On Sag	1	488.21	488.55	488.21	0.00	5.82	N/A	N/A	N/A	12.00	14.82	489.41
18	CB-I2	FHWA HEC-22 GENERIC	N/A	On Sag	1	476.91	479.97	476.91	0.00	0.49	N/A	N/A	N/A	12.00	2.27	480.29
19	CB-I3	FHWA HEC-22 GENERIC	N/A	On Grade	1	479.00	483.97	479.00	N/A	3.26	2.96	0.31	90.52	12.00	8.69	484.20
20	CB-K1	FHWA HEC-22 GENERIC	N/A	On Sag	1	478.07	482.00	478.07	0.00	10.19	N/A	N/A	N/A	12.00	21.54	483.03

Subbasin Hydrology

Subbasin : {STORM-BASINS}.1

Input Data

Area (ac) 2.38
Weighted Runoff Coefficient 0.6100

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
Residential	1.66	-	0.70
Pasture	0.71	-	0.40
Composite Area & Weighted Runoff Coeff.	2.37		0.61

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where :

T_c = Time of Concentration (hr)
n = Manning's roughness
L_f = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
S_f = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (S_f^{0.5}) (unpaved surface)
V = 20.3282 * (S_f^{0.5}) (paved surface)
V = 15.0 * (S_f^{0.5}) (grassed waterway surface)
V = 10.0 * (S_f^{0.5}) (nearly bare & untilled surface)
V = 9.0 * (S_f^{0.5}) (cultivated straight rows surface)
V = 7.0 * (S_f^{0.5}) (short grass pasture surface)
V = 5.0 * (S_f^{0.5}) (woodland surface)
V = 2.5 * (S_f^{0.5}) (forest w/heavy litter surface)
T_c = (L_f / V) / (3600 sec/hr)

Where:

T_c = Time of Concentration (hr)
L_f = Flow Length (ft)
V = Velocity (ft/sec)
S_f = Slope (ft/ft)

Channel Flow Equation :

$$V = (1.49 * (R^{2/3})) * (S_f^{0.5}) / n$$

R = A_q / W_p
T_c = (L_f / V) / (3600 sec/hr)

Where :

T_c = Time of Concentration (hr)
L_f = Flow Length (ft)
R = Hydraulic Radius (ft)
A_q = Flow Area (ft²)
W_p = Wetted Perimeter (ft)
V = Velocity (ft/sec)
S_f = Slope (ft/ft)
n = Manning's roughness

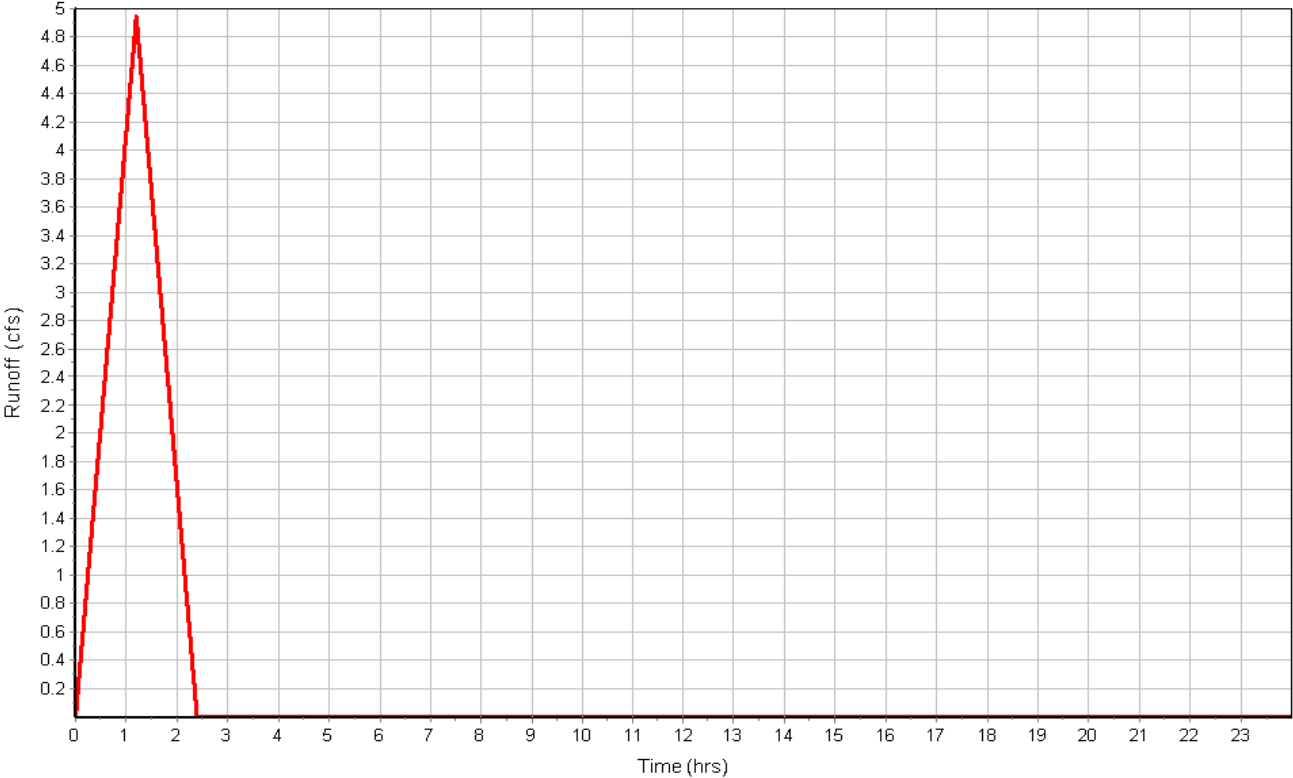
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	1221.57	0.00	0.00
Slope (%) :	2.6	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.28	0.00	0.00
Computed Flow Time (min) :	71.78	0.00	0.00
Total TOC (min)	71.78		

Subbasin Runoff Results

Total Rainfall (in)	4.08
Total Runoff (in)	2.49
Peak Runoff (cfs)	4.94
Rainfall Intensity	3.410
Weighted Runoff Coefficient	0.6100
Time of Concentration (days hh:mm:ss)	0 01:11:47

Subbasin : {STORM-BASINS}.1

Runoff Hydrograph



Subbasin : {STORM-BASINS}.10

Input Data

Area (ac) 0.87
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.78	-	0.60
-	0.09	-	0.90
Composite Area & Weighted Runoff Coeff.	0.87		0.63

Time of Concentration

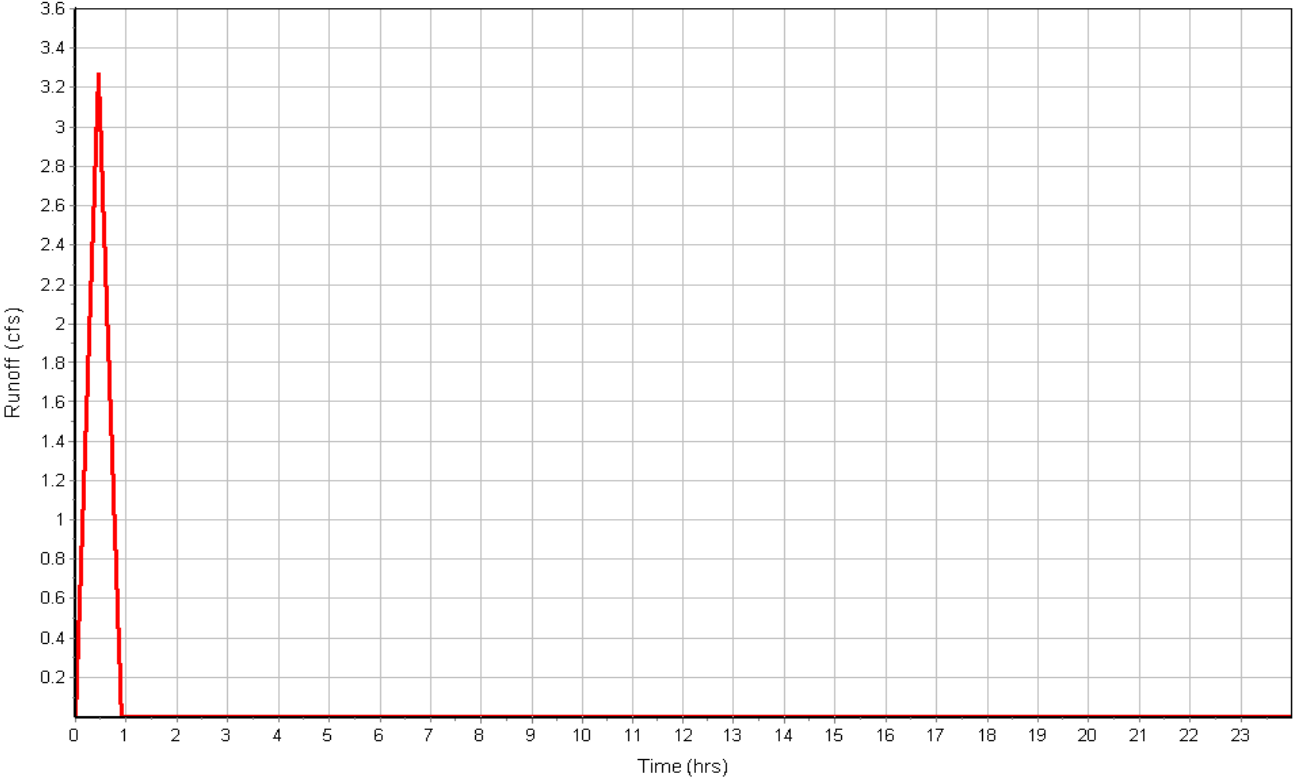
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	421.06	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.26	0.00	0.00
Computed Flow Time (min) :	27.18	0.00	0.00
Total TOC (min)	27.18		

Subbasin Runoff Results

Total Rainfall (in) 2.69
 Total Runoff (in) 1.70
 Peak Runoff (cfs) 3.27
 Rainfall Intensity 5.949
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:27:11

Subbasin : {STORM-BASINS}.10

Runoff Hydrograph



Subbasin : {STORM-BASINS}.11

Input Data

Area (ac) 0.12
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

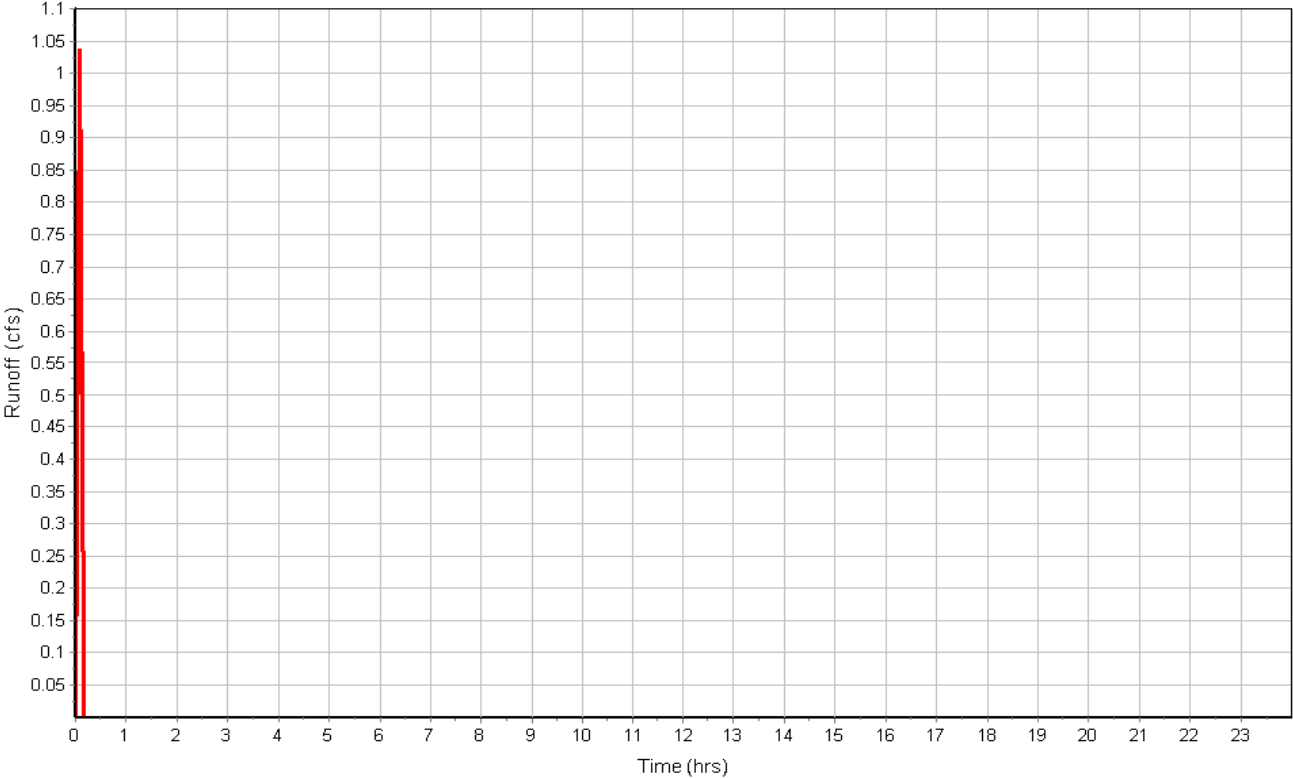
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	251.93	0.00	0.00
Slope (%) :	4.7	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	4.41	0.00	0.00
Computed Flow Time (min) :	0.95	0.00	0.00
Total TOC (min)0.95			

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.75
Peak Runoff (cfs) 1.04
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:57

Subbasin : {STORM-BASINS}.11

Runoff Hydrograph



Subbasin : {STORM-BASINS}.12

Input Data

Area (ac) 0.16
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.16	-	0.90
Composite Area & Weighted Runoff Coeff.	0.16		0.90

Time of Concentration

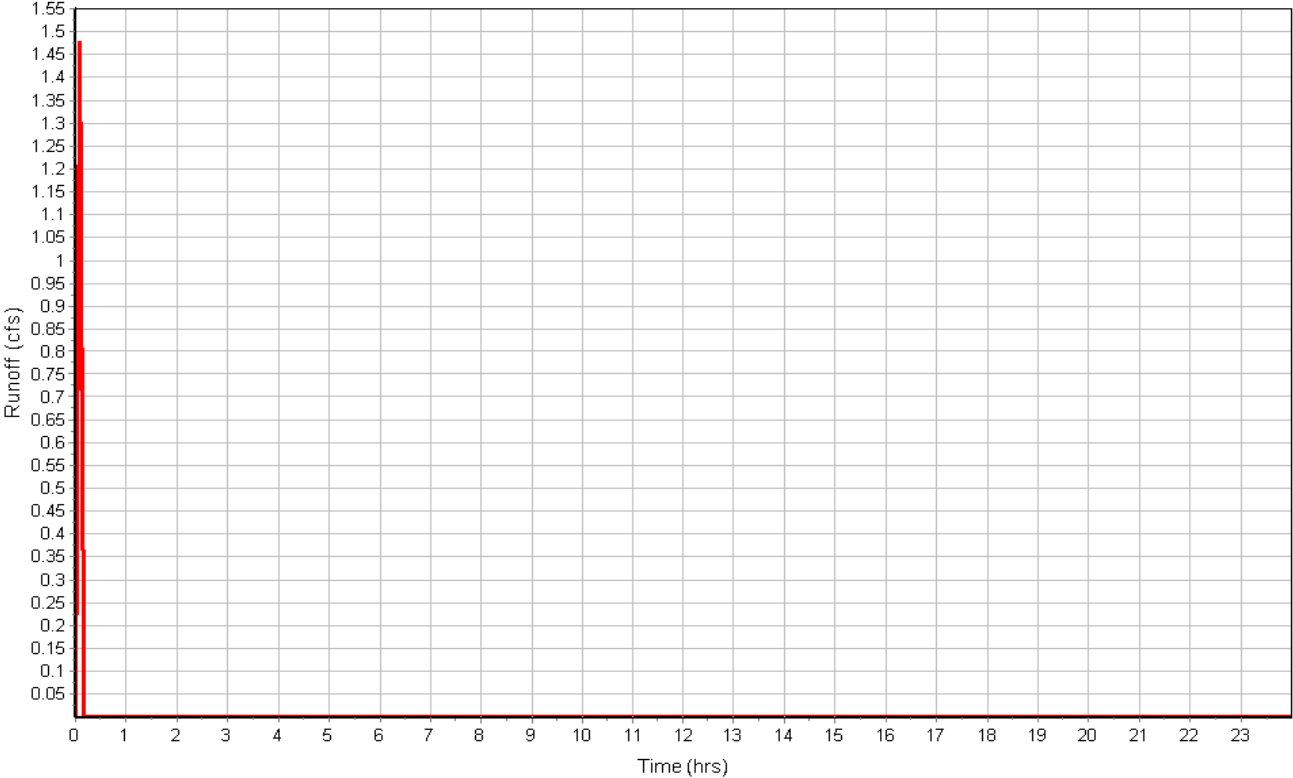
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	261.41	0.00	0.00
Slope (%) :	1.9	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.80	0.00	0.00
Computed Flow Time (min) :	1.56	0.00	0.00
Total TOC (min)	1.56		

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.75
 Peak Runoff (cfs) 1.48
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:34

Subbasin : {STORM-BASINS}.12

Runoff Hydrograph



Subbasin : {STORM-BASINS}.13

Input Data

Area (ac) 0.23
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.23	-	0.90
Composite Area & Weighted Runoff Coeff.	0.23		0.90

Time of Concentration

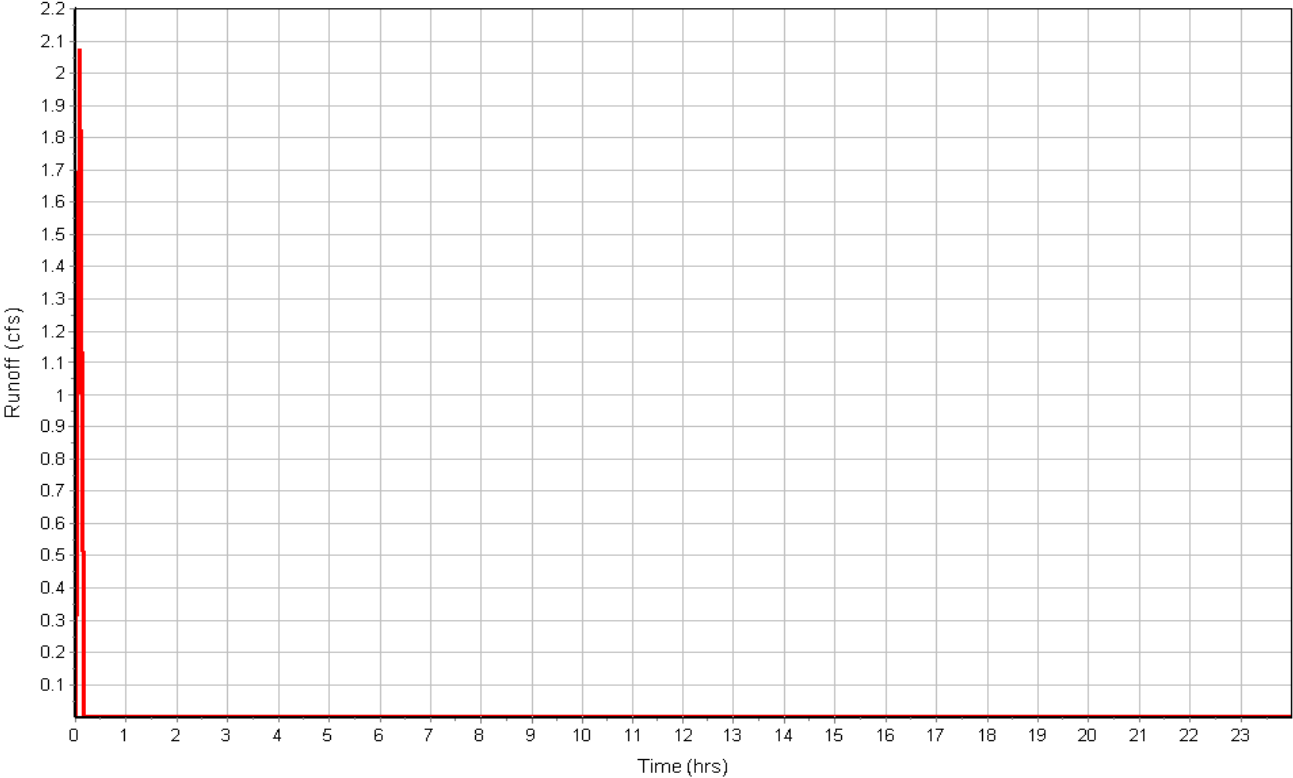
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	407.22	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	2.36	0.00	0.00
Total TOC (min)	2.36		

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.75
 Peak Runoff (cfs) 2.07
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:02:22

Subbasin : {STORM-BASINS}.13

Runoff Hydrograph



Subbasin : {STORM-BASINS}.14

Input Data

Area (ac) 0.74
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.74	-	0.72
Composite Area & Weighted Runoff Coeff.	0.74		0.72

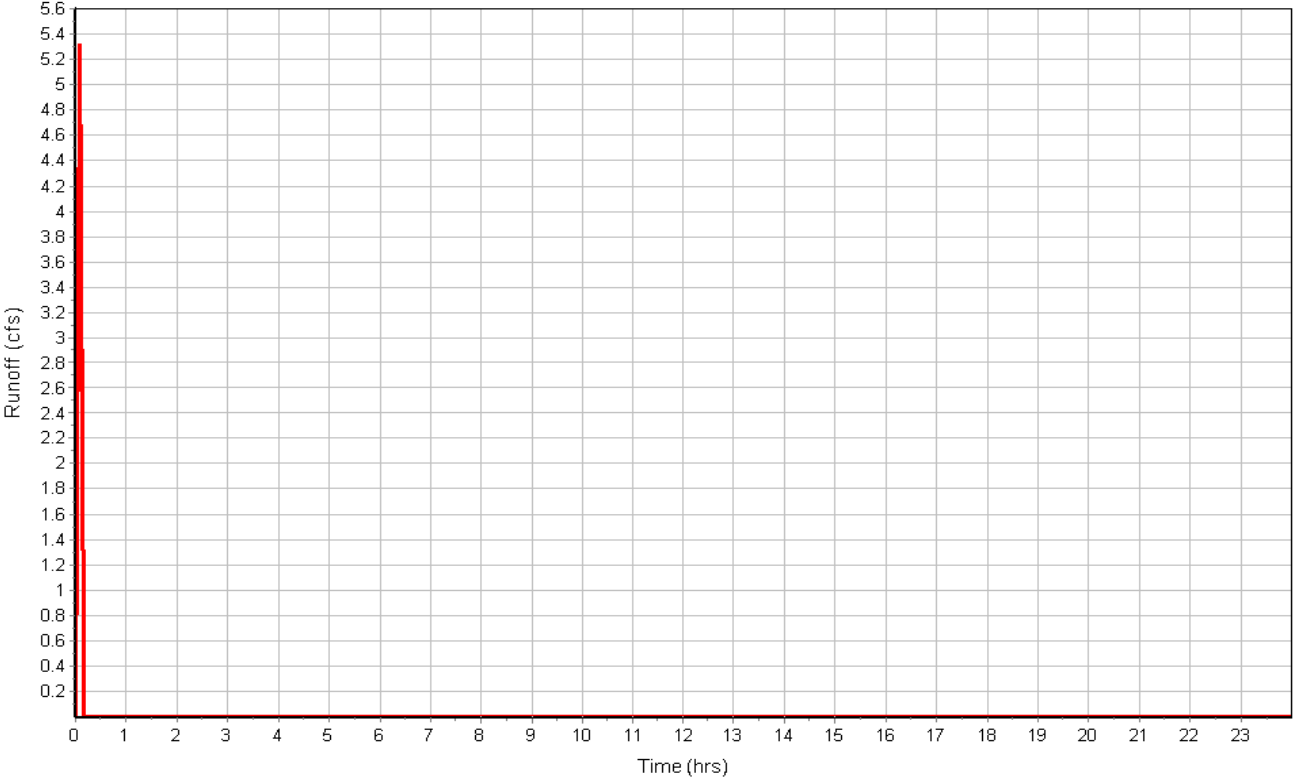
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.60
Peak Runoff (cfs) 5.31
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.14

Runoff Hydrograph



Subbasin : {STORM-BASINS}.15

Input Data

Area (ac) 1.28
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.28	-	0.72
Composite Area & Weighted Runoff Coeff.	1.28		0.72

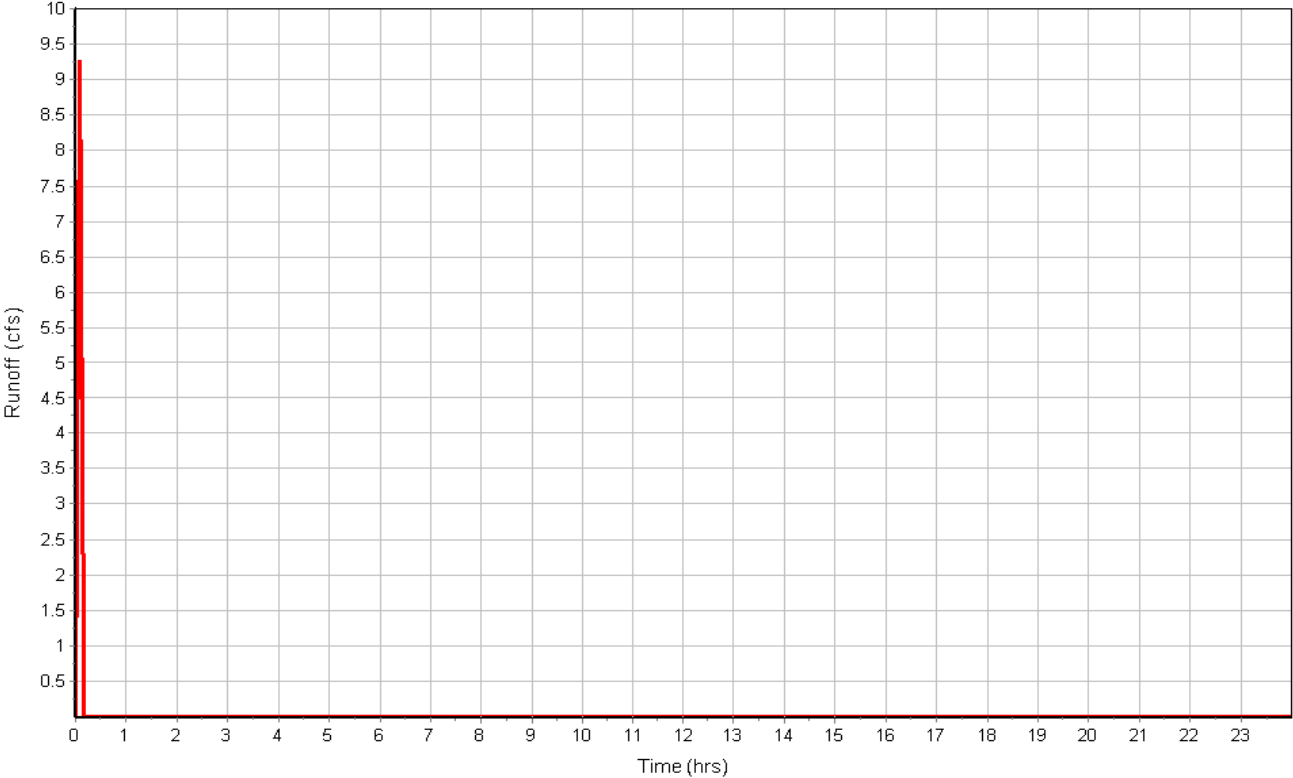
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.60
Peak Runoff (cfs) 9.25
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.15

Runoff Hydrograph



Subbasin : {STORM-BASINS}.16

Input Data

Area (ac) 0.21
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.10	-	0.90
-	0.10	-	0.60
Composite Area & Weighted Runoff Coeff.	0.20		0.75

Time of Concentration

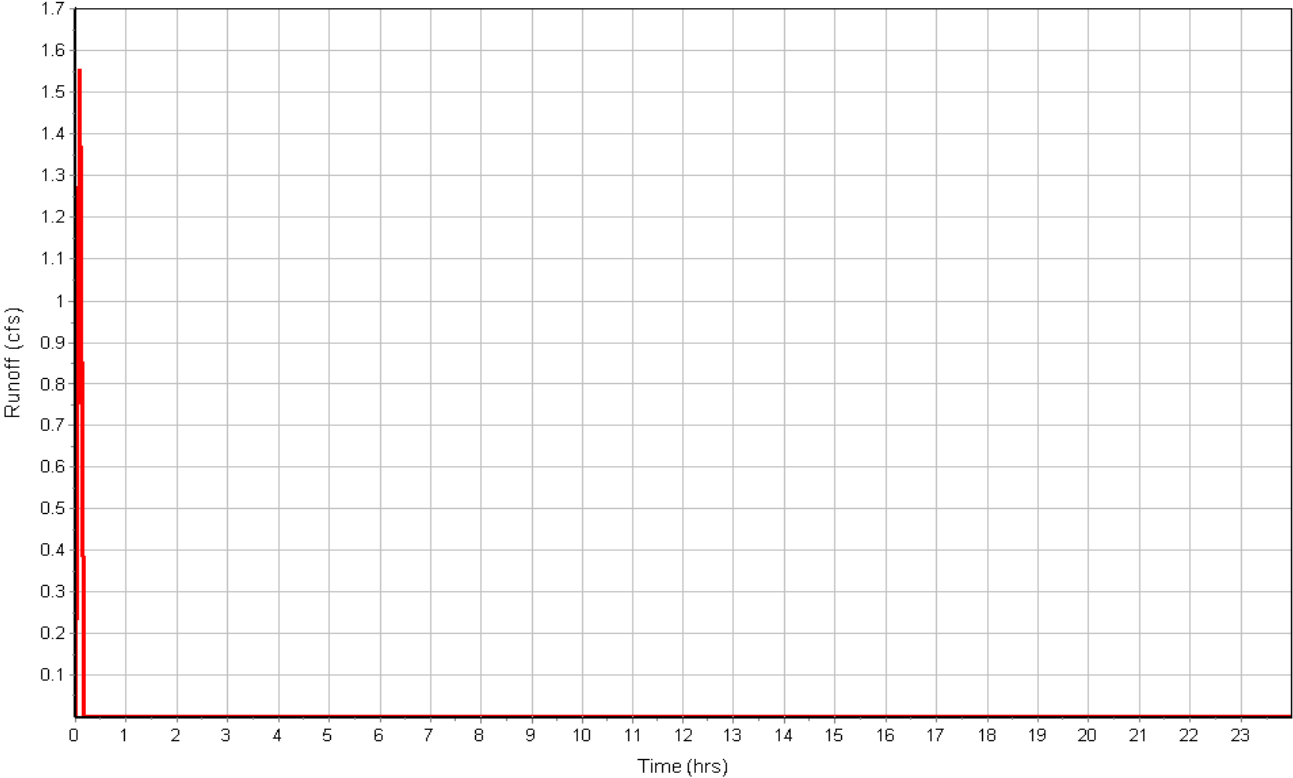
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	45.99	0.00	0.00
Slope (%) :	5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.19	0.00	0.00
Computed Flow Time (min) :	4.01	0.00	0.00
Total TOC (min)	4.01		

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 1.55
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:04:01

Subbasin : {STORM-BASINS}.16

Runoff Hydrograph



Subbasin : {STORM-BASINS}.17

Input Data

Area (ac) 0.28
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.28	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.90

Time of Concentration

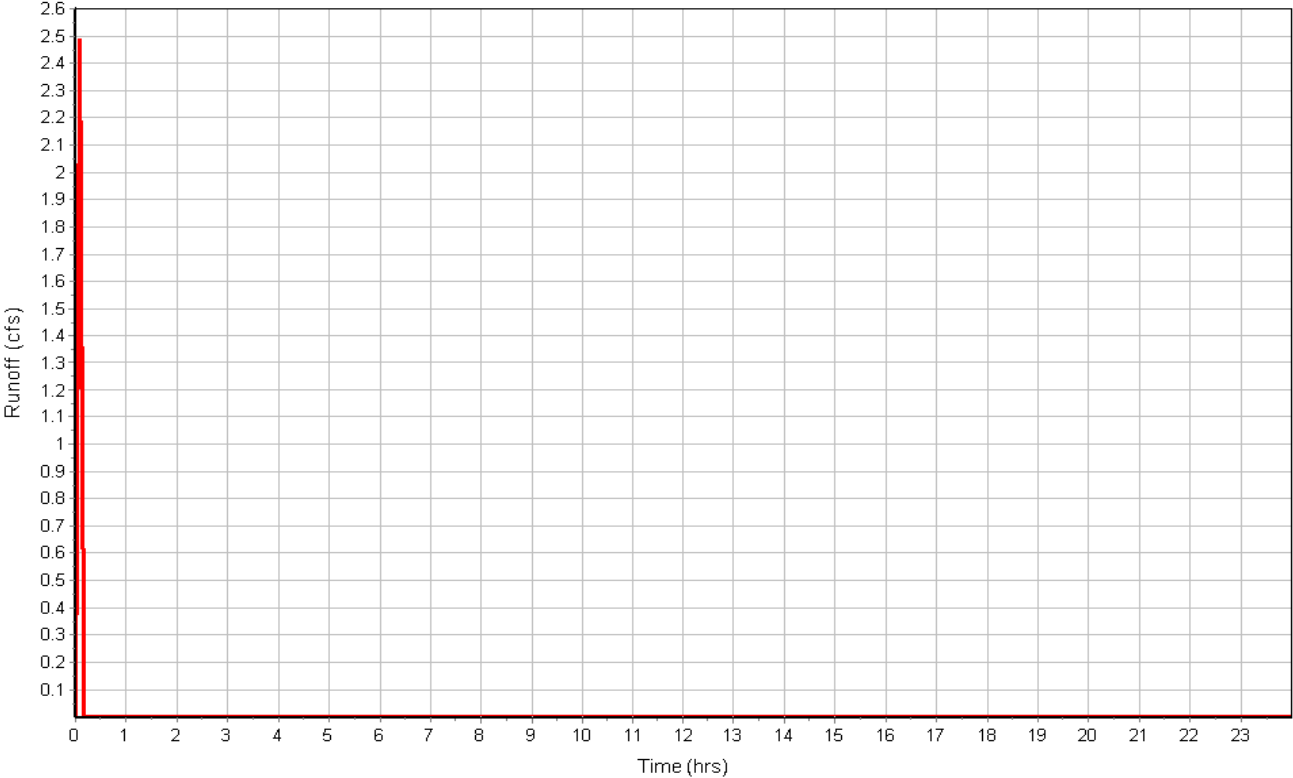
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	400.01	0.00	0.00
Slope (%) :	3.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.80	0.00	0.00
Computed Flow Time (min) :	1.75	0.00	0.00
Total TOC (min)1.75			

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.75
Peak Runoff (cfs) 2.48
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:45

Subbasin : {STORM-BASINS}.17

Runoff Hydrograph



Subbasin : {STORM-BASINS}.18

Input Data

Area (ac) 3.51
Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	3.51	-	0.60
Composite Area & Weighted Runoff Coeff.	3.51		0.60

Time of Concentration

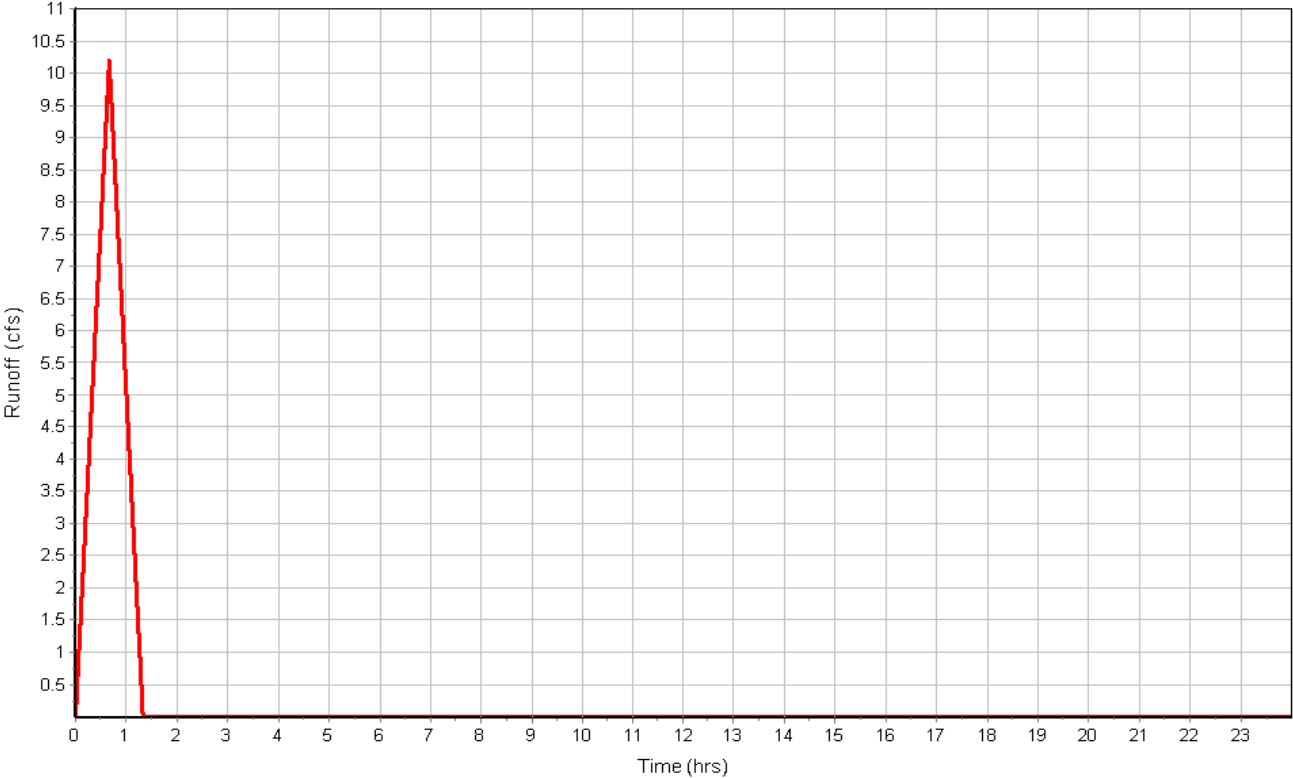
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	723.77	0.00	0.00
Slope (%) :	4	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	39.75	0.00	0.00
Total TOC (min)	39.75		

Subbasin Runoff Results

Total Rainfall (in) 3.21
Total Runoff (in) 1.93
Peak Runoff (cfs) 10.19
Rainfall Intensity 4.835
Weighted Runoff Coefficient 0.6000
Time of Concentration (days hh:mm:ss) 0 00:39:45

Subbasin : {STORM-BASINS}.18

Runoff Hydrograph



Subbasin : {STORM-BASINS}.19

Input Data

Area (ac) 0.05
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.05	-	0.90
Composite Area & Weighted Runoff Coeff.	0.05		0.90

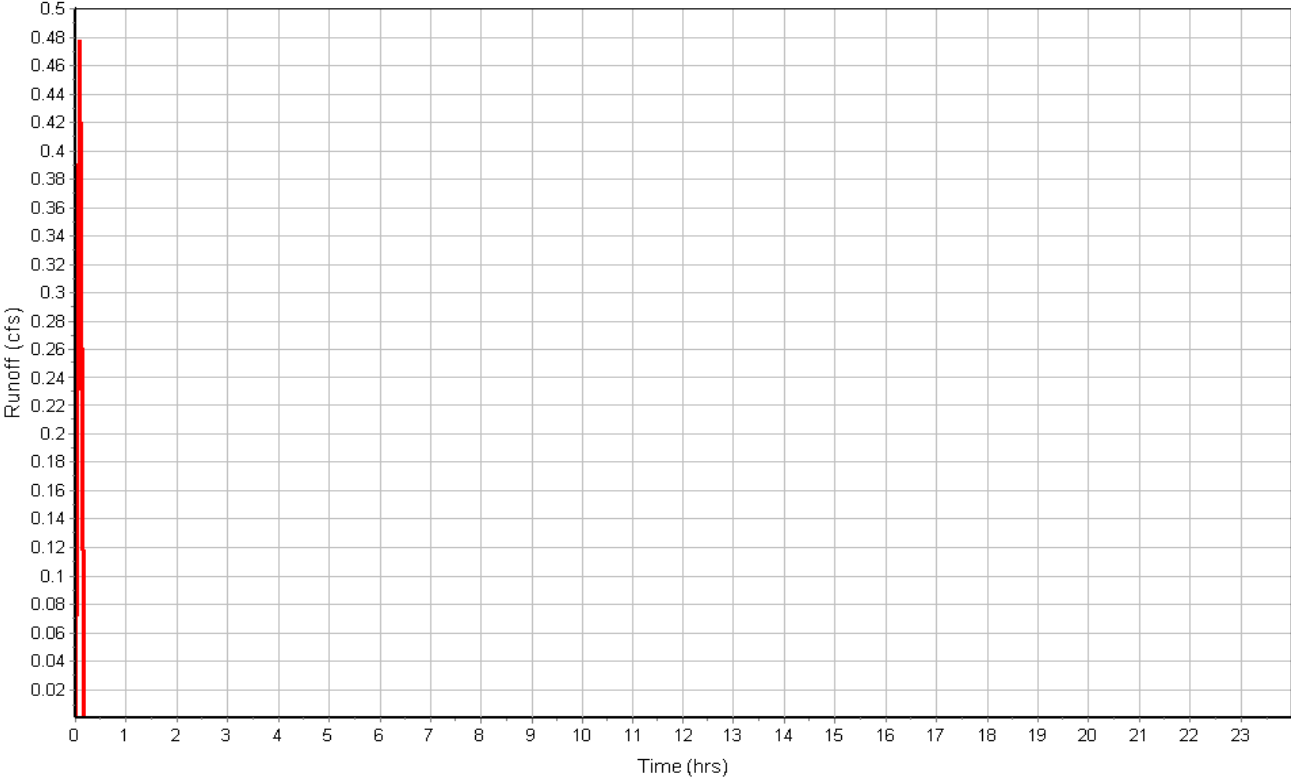
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.75
Peak Runoff (cfs) 0.48
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.19

Runoff Hydrograph



Subbasin : {STORM-BASINS}.2

Input Data

Area (ac) 0.96
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.86	-	0.60
-	0.10	-	0.90
Composite Area & Weighted Runoff Coeff.	0.96		0.63

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	606.64	0.00	0.00
Slope (%) :	1.8	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	47.50	0.00	0.00

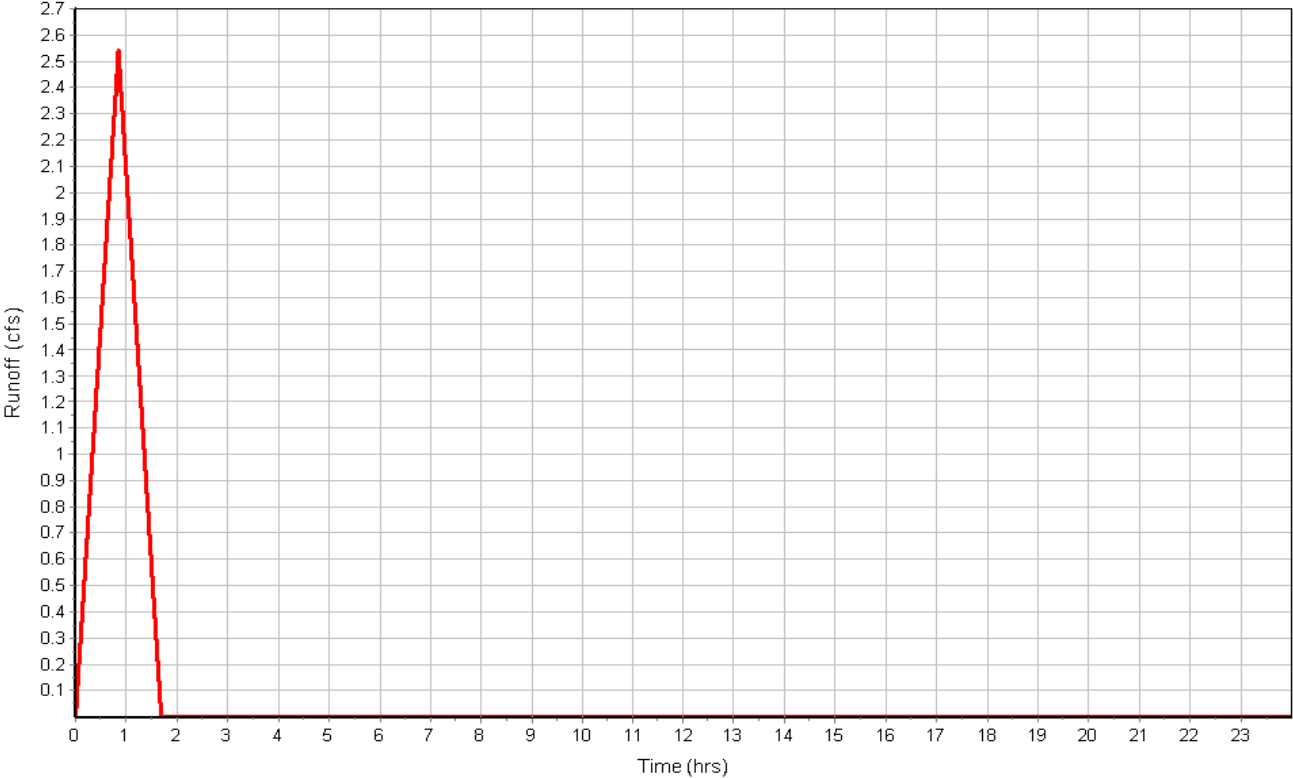
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	533.67	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	3.10	0.00	0.00
Total TOC (min)	50.60		

Subbasin Runoff Results

Total Rainfall (in) 3.55
 Total Runoff (in) 2.23
 Peak Runoff (cfs) 2.54
 Rainfall Intensity 4.198
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:50:36

Subbasin : {STORM-BASINS}.2

Runoff Hydrograph



Subbasin : {STORM-BASINS}.20

Input Data

Area (ac) 0.19
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.19	-	0.90
Composite Area & Weighted Runoff Coeff.	0.19		0.90

Time of Concentration

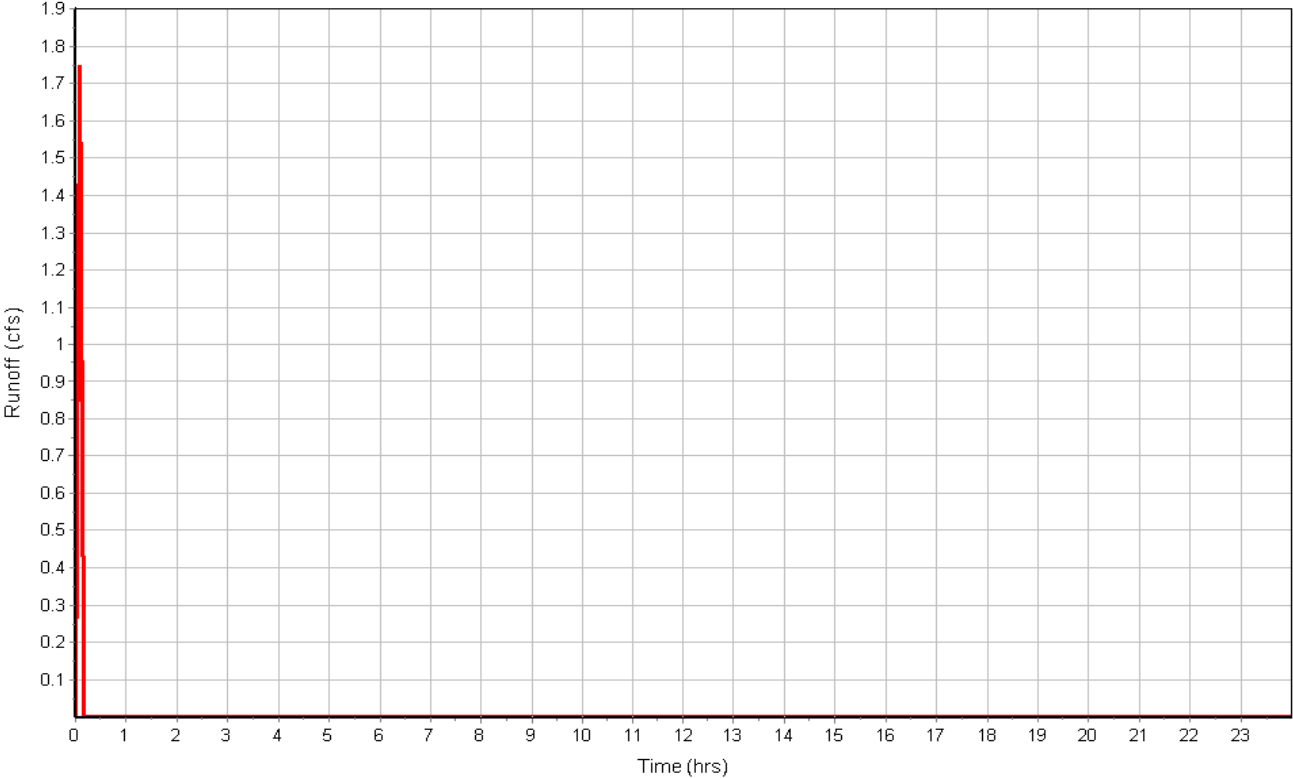
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	319.14	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.85	0.00	0.00
Total TOC (min)1.85			

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.75
Peak Runoff (cfs) 1.75
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:51

Subbasin : {STORM-BASINS}.20

Runoff Hydrograph



Subbasin : {STORM-BASINS}.21

Input Data

Area (ac) 0.22
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.90
Composite Area & Weighted Runoff Coeff.	0.22		0.90

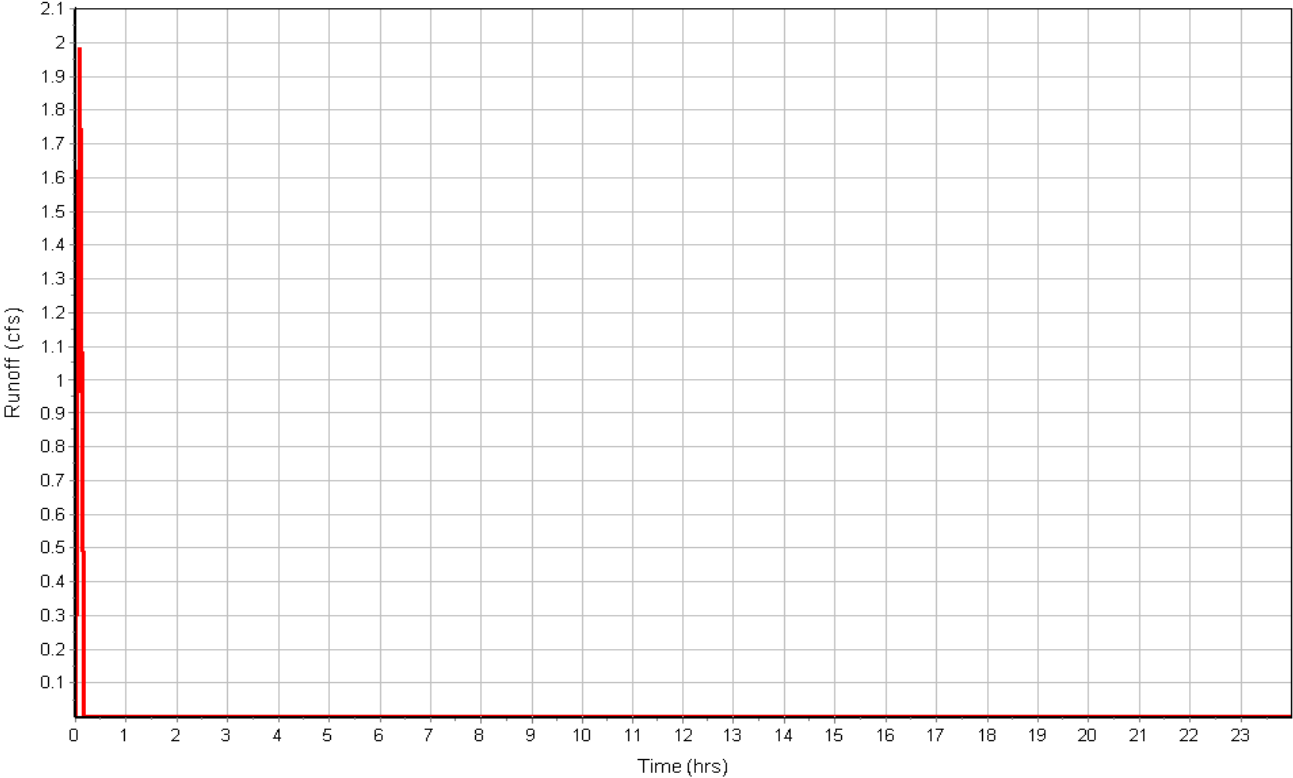
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.75
Peak Runoff (cfs) 1.98
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.21

Runoff Hydrograph



Subbasin : {STORM-BASINS}.22

Input Data

Area (ac) 0.20
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.20	-	0.90
Composite Area & Weighted Runoff Coeff.	0.20		0.90

Time of Concentration

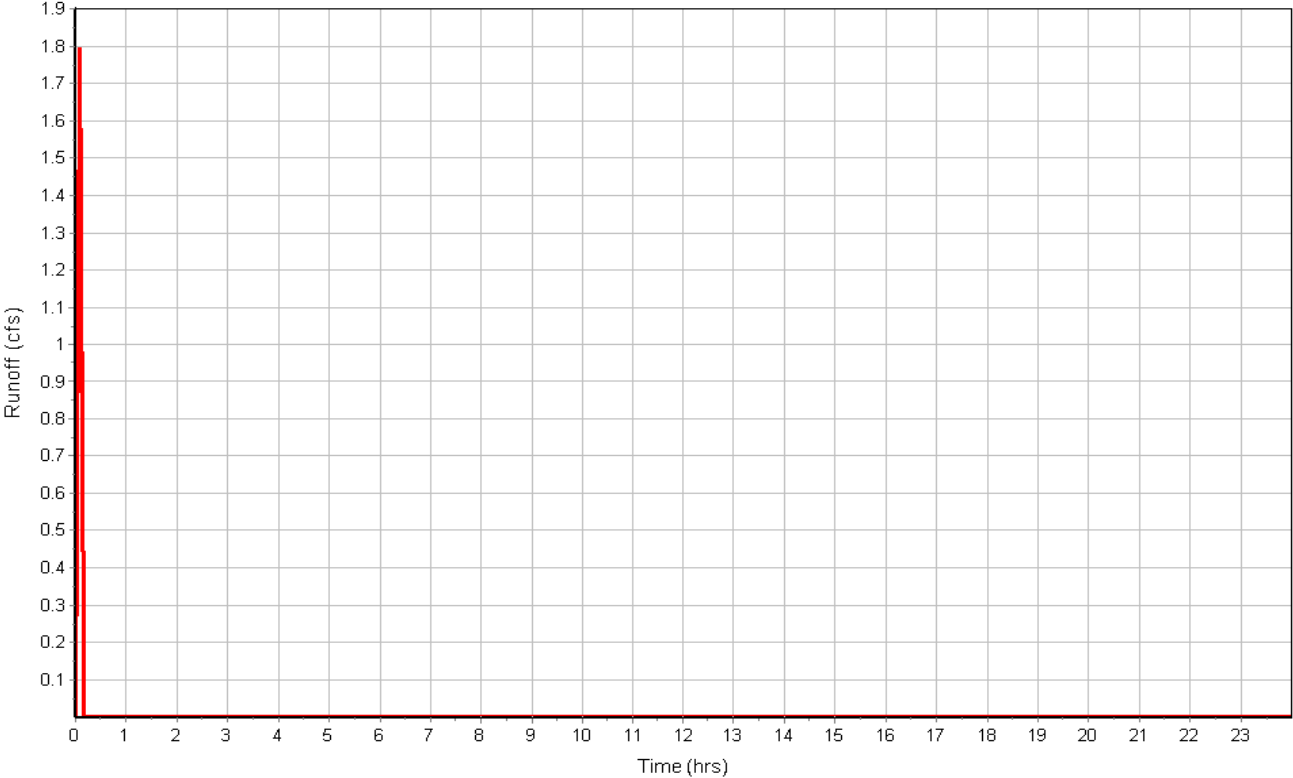
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	364.92	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	1.73	0.00	0.00
Total TOC (min)	1.73		

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.75
 Peak Runoff (cfs) 1.79
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:44

Subbasin : {STORM-BASINS}.22

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23A

Input Data

Area (ac) 0.88
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.88	-	0.60
Composite Area & Weighted Runoff Coeff.	0.88		0.60

Time of Concentration

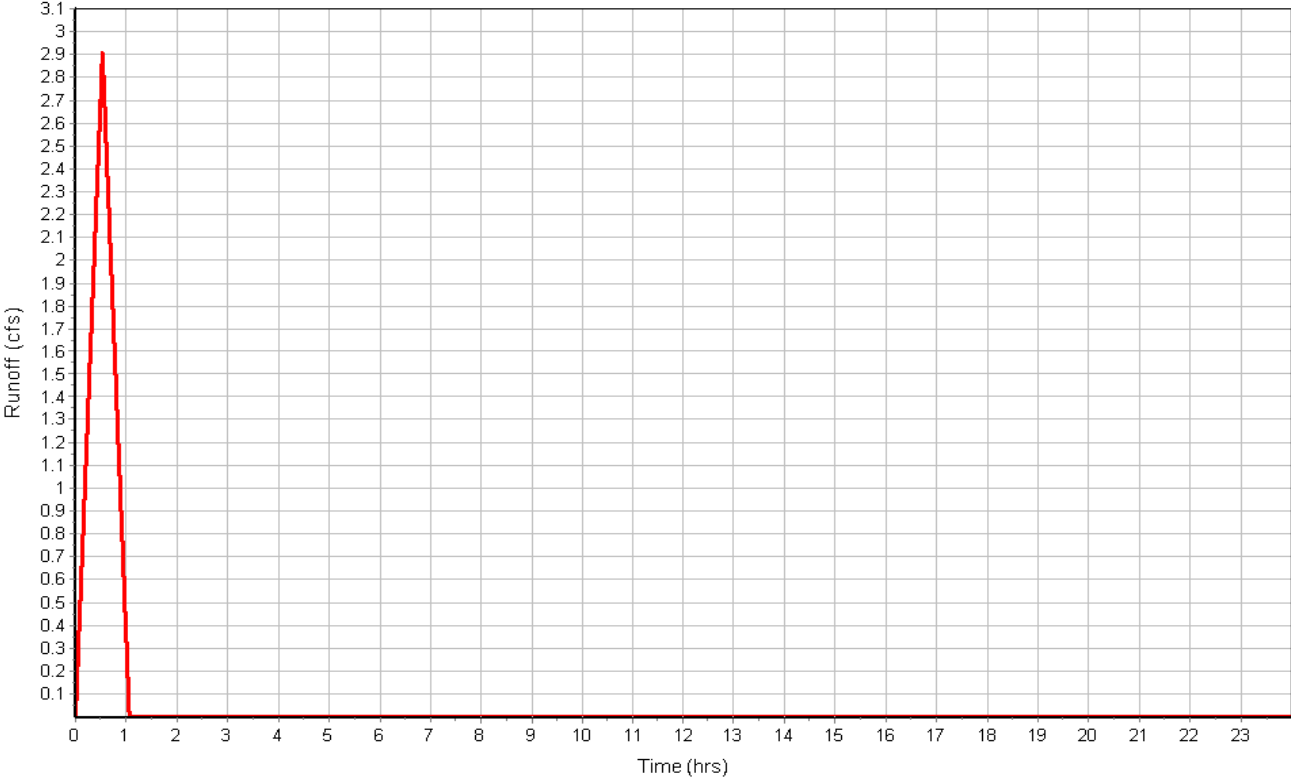
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	476.41	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.25	0.00	0.00
Computed Flow Time (min) :	31.91	0.00	0.00
Total TOC (min)	31.91		

Subbasin Runoff Results

Total Rainfall (in) 2.92
 Total Runoff (in) 1.75
 Peak Runoff (cfs) 2.91
 Rainfall Intensity 5.498
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:31:55

Subbasin : {STORM-BASINS}.23A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23B

Input Data

Area (ac) 0.21
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.21	-	0.90
Composite Area & Weighted Runoff Coeff.	0.21		0.90

Time of Concentration

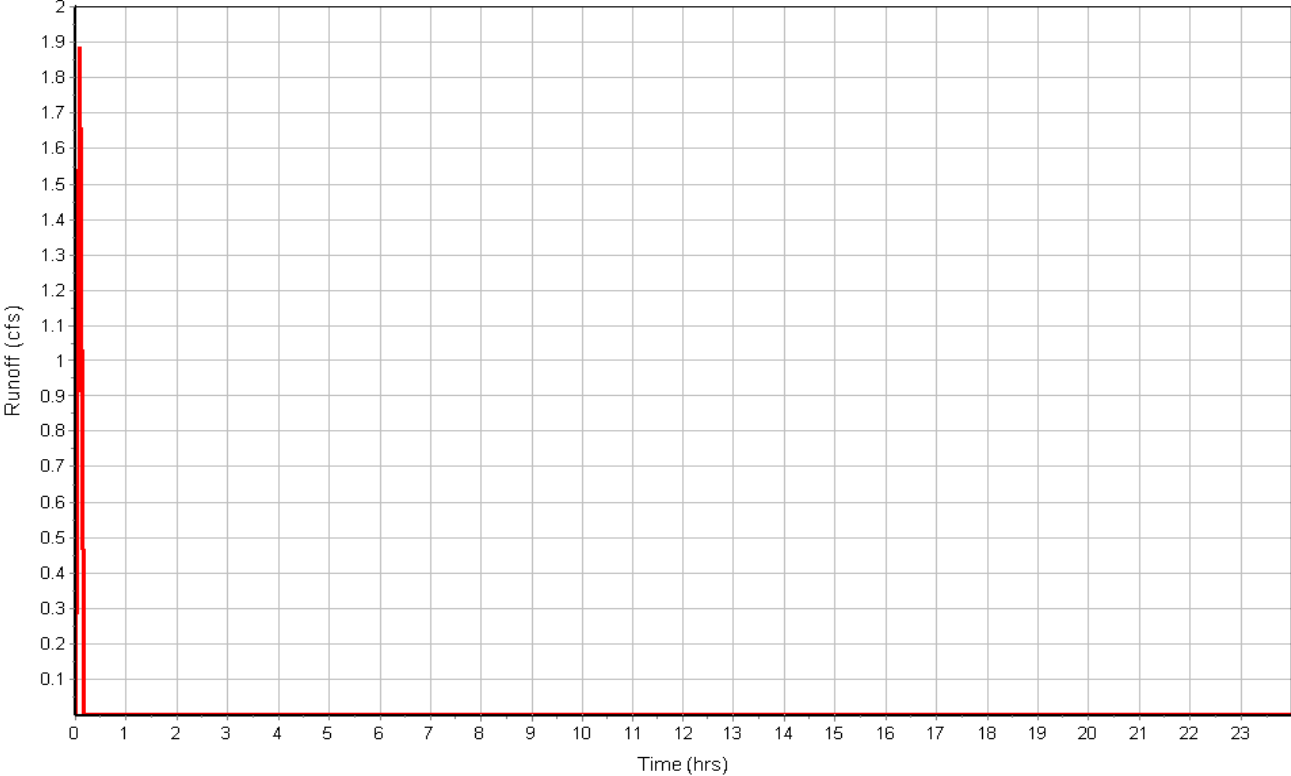
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	294.20	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.71	0.00	0.00
Total TOC (min)	1.71		

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.75
Peak Runoff (cfs) 1.88
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:43

Subbasin : {STORM-BASINS}.23B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.26

Input Data

Area (ac) 1.06
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.06	-	0.60
Composite Area & Weighted Runoff Coeff.	1.06		0.60

Time of Concentration

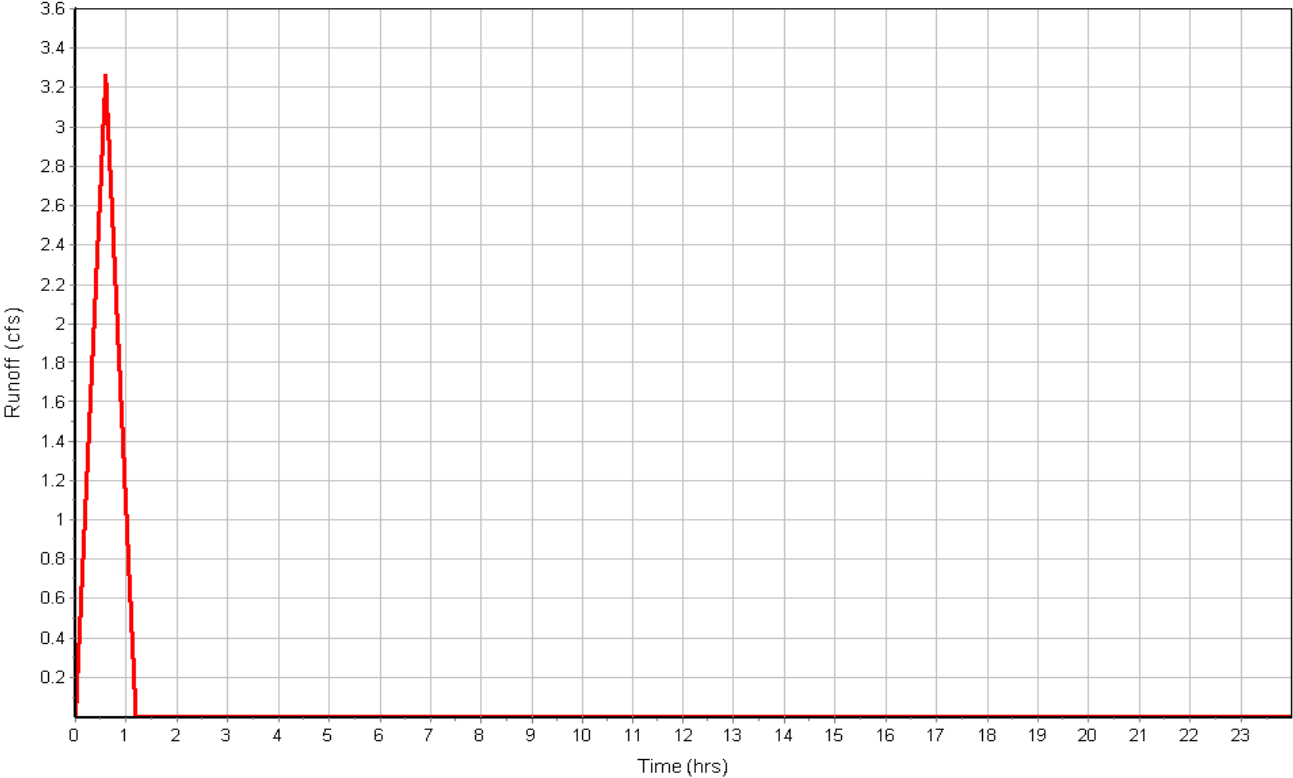
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	361.33	0.00	0.00
Slope (%) :	1.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.17	0.00	0.00
Computed Flow Time (min) :	35.74	0.00	0.00
Total TOC (min)	35.74		

Subbasin Runoff Results

Total Rainfall (in) 3.06
 Total Runoff (in) 1.84
 Peak Runoff (cfs) 3.26
 Rainfall Intensity 5.145
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:35:44

Subbasin : {STORM-BASINS}.26

Runoff Hydrograph



Subbasin : {STORM-BASINS}.27

Input Data

Area (ac) 0.58
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.72
Composite Area & Weighted Runoff Coeff.	0.58		0.72

Time of Concentration

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00
Total TOC (min)	15.94		

Subbasin Runoff Results

Total Rainfall (in) 2.00
 Total Runoff (in) 1.44
 Peak Runoff (cfs) 3.14
 Rainfall Intensity 7.500
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:15:56

Subbasin : {STORM-BASINS}.28

Input Data

Area (ac) 0.22
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.72
Composite Area & Weighted Runoff Coeff.	0.22		0.72

Time of Concentration

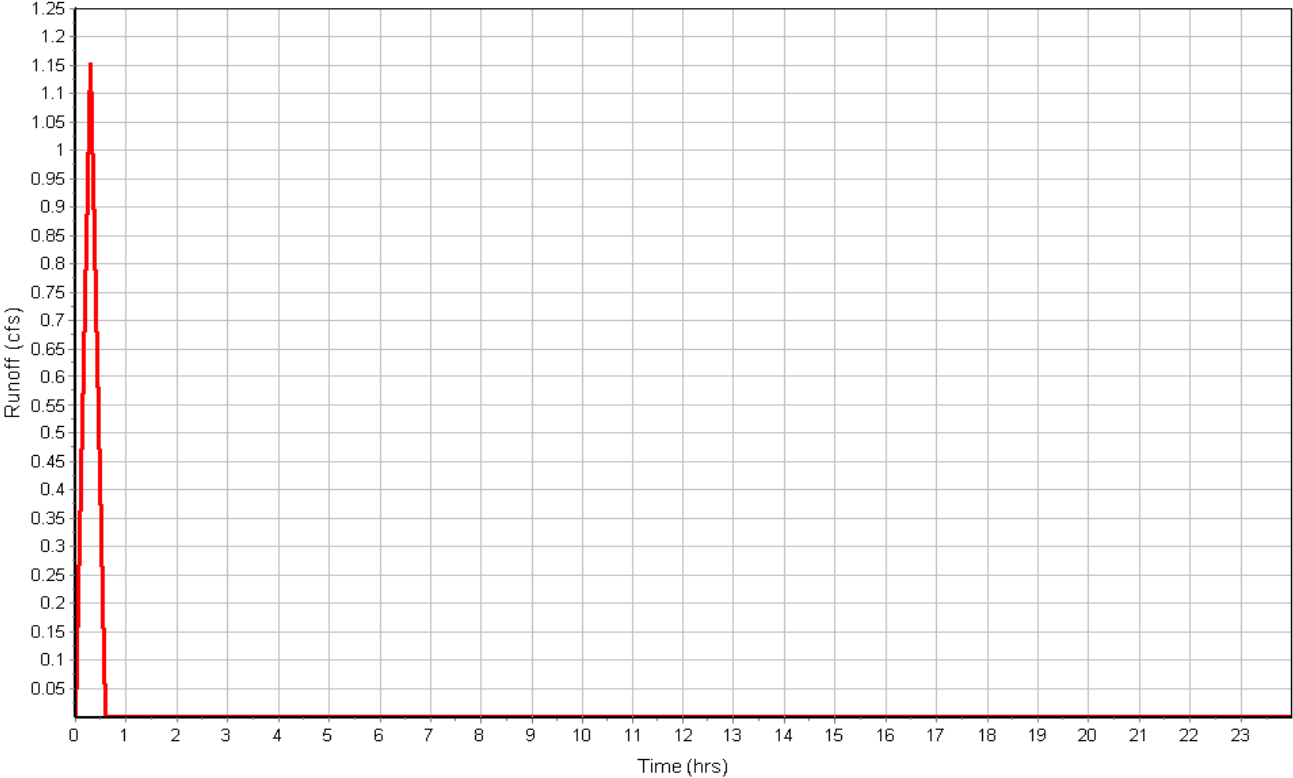
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	185	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.18	0.00	0.00
Computed Flow Time (min) :	17.61	0.00	0.00
Total TOC (min)	17.61		

Subbasin Runoff Results

Total Rainfall (in) 2.12
Total Runoff (in) 1.52
Peak Runoff (cfs) 1.15
Rainfall Intensity 7.182
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:17:37

Subbasin : {STORM-BASINS}.28

Runoff Hydrograph



Subbasin : {STORM-BASINS}.29

Input Data

Area (ac) 0.15
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.15	-	0.90
Composite Area & Weighted Runoff Coeff.	0.15		0.90

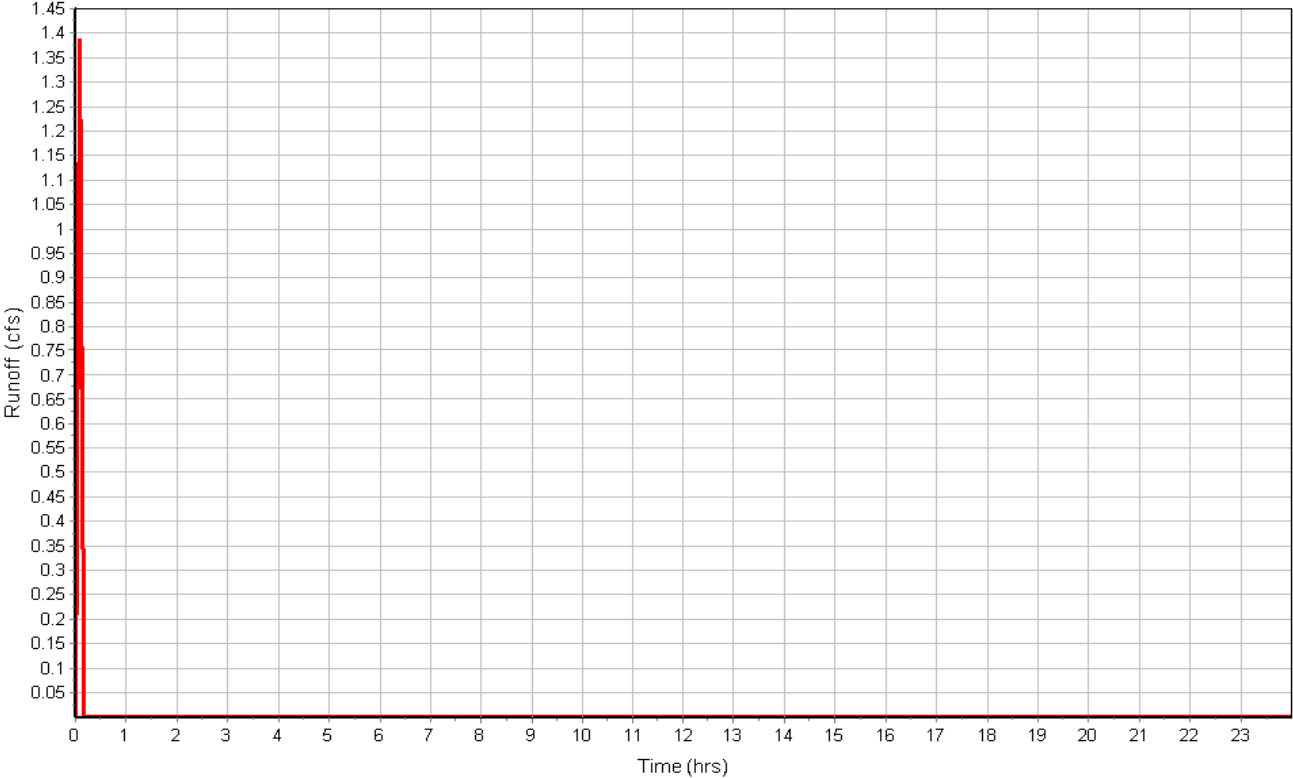
Time of Concentration

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	223.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.30	0.00	0.00
Total TOC (min)	1.30		

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.75
 Peak Runoff (cfs) 1.39
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:18

Runoff Hydrograph



Subbasin : {STORM-BASINS}.3

Input Data

Area (ac) 1.34
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.20	-	0.60
-	0.13	-	0.90
Composite Area & Weighted Runoff Coeff.	1.33		0.63

Time of Concentration

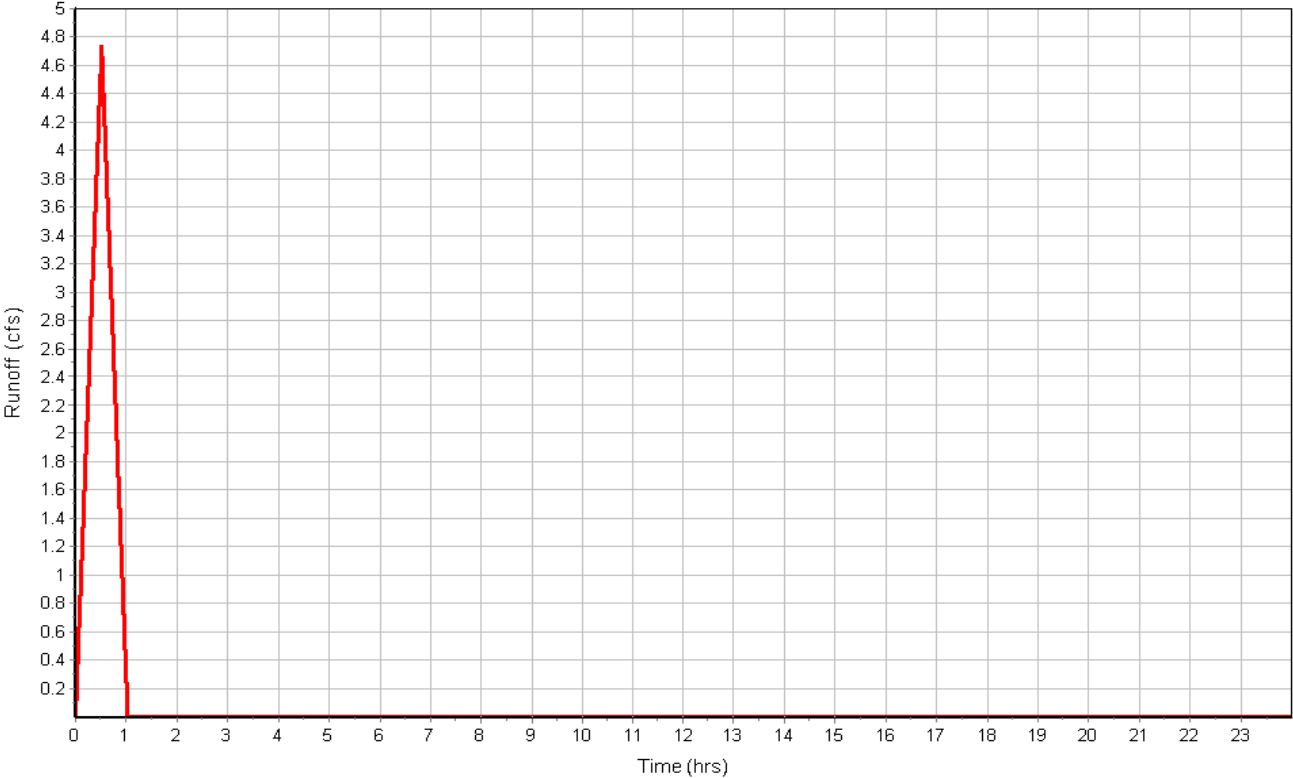
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	545.09	0.00	0.00
Slope (%) :	4.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	30.78	0.00	0.00
Total TOC (min)	30.78		

Subbasin Runoff Results

Total Rainfall (in) 2.89
 Total Runoff (in) 1.82
 Peak Runoff (cfs) 4.73
 Rainfall Intensity 5.615
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:30:47

Subbasin : {STORM-BASINS}.3

Runoff Hydrograph



Subbasin : {STORM-BASINS}.30

Input Data

Area (ac) 0.12
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

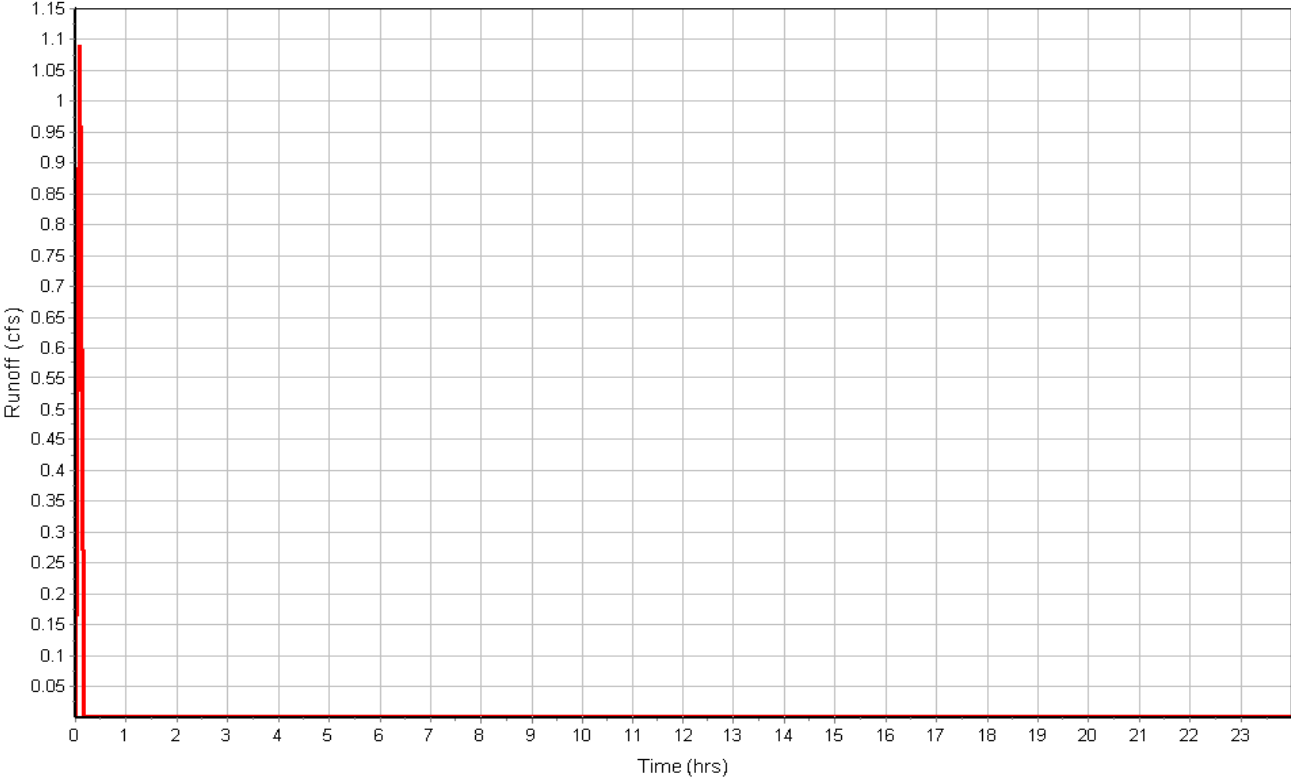
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	222.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.29	0.00	0.00
Total TOC (min)	1.29		

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.75
 Peak Runoff (cfs) 1.09
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:17

Subbasin : {STORM-BASINS}.30

Runoff Hydrograph



Subbasin : {STORM-BASINS}.31

Input Data

Area (ac) 0.12
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

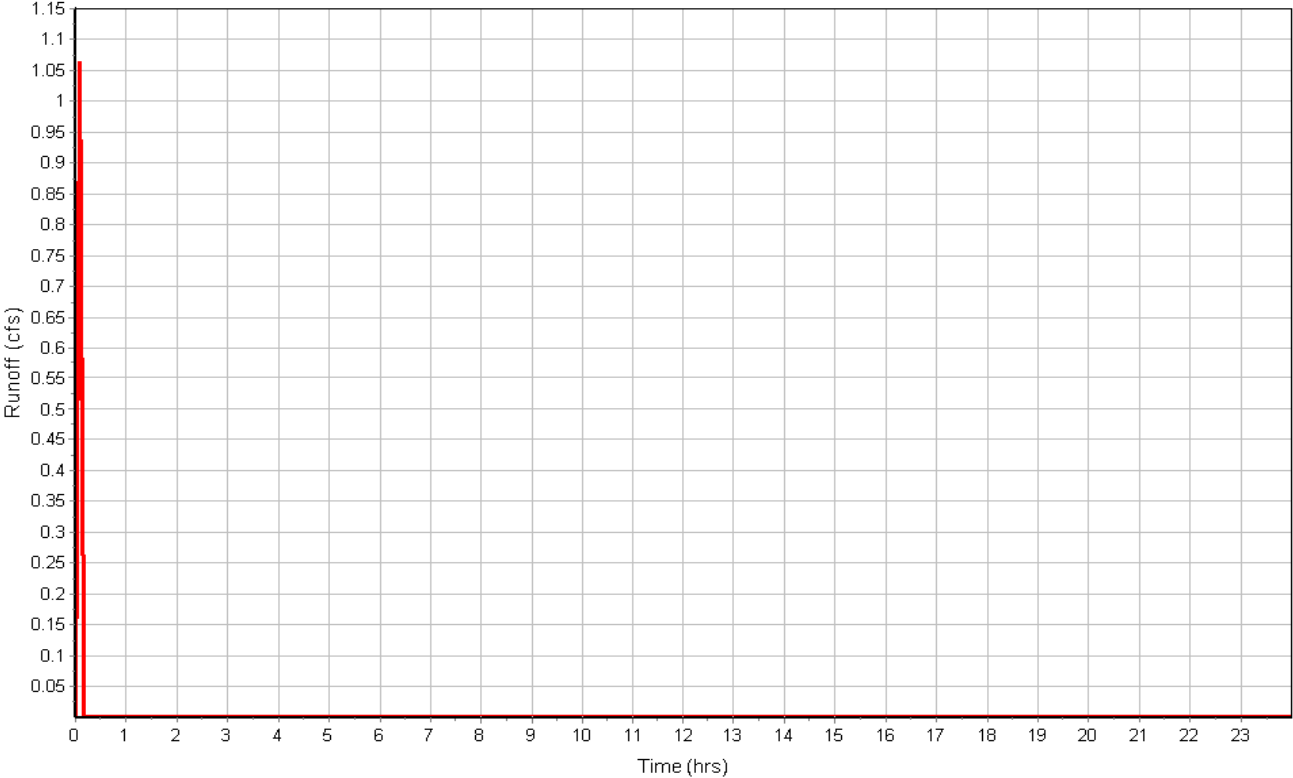
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	258.85	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.50	0.00	0.00
Total TOC (min)	1.50		

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.75
 Peak Runoff (cfs) 1.06
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:30

Subbasin : {STORM-BASINS}.31

Runoff Hydrograph



Subbasin : {STORM-BASINS}.4

Input Data

Area (ac) 0.17
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.00	-	0.60
-	0.00	-	0.90
Composite Area & Weighted Runoff Coeff.	0.00		0.75

Time of Concentration

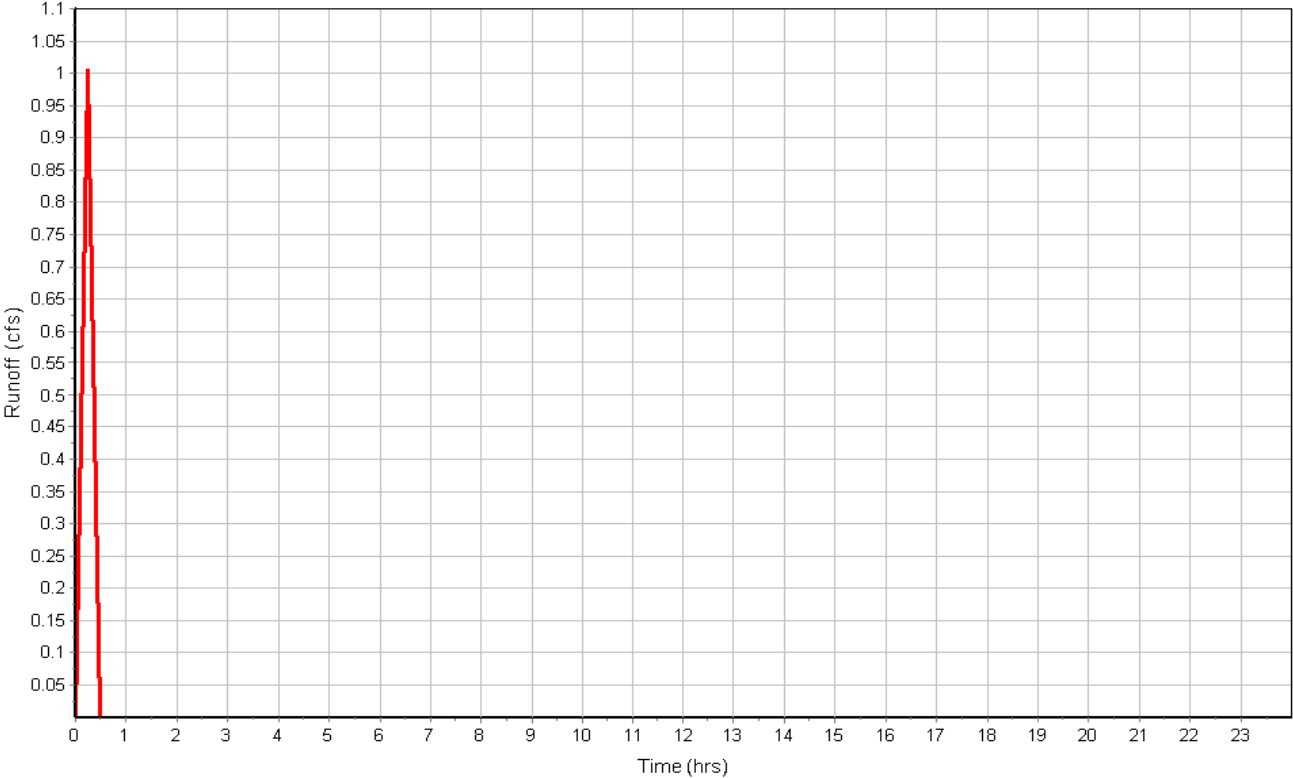
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	211.10	0.00	0.00
Slope (%) :	4.2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.24	0.00	0.00
Computed Flow Time (min) :	14.55	0.00	0.00
Total TOC (min)	14.55		

Subbasin Runoff Results

Total Rainfall (in) 1.88
 Total Runoff (in) 1.41
 Peak Runoff (cfs) 1.00
 Rainfall Intensity 7.778
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:14:33

Subbasin : {STORM-BASINS}.4

Runoff Hydrograph



Subbasin : {STORM-BASINS}.5

Input Data

Area (ac) 0.46
 Weighted Runoff Coefficient 0.6900

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.32	-	0.60
-	0.14	-	0.90
Composite Area & Weighted Runoff Coeff.	0.46		0.69

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	175.47	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	14.35	0.00	0.00

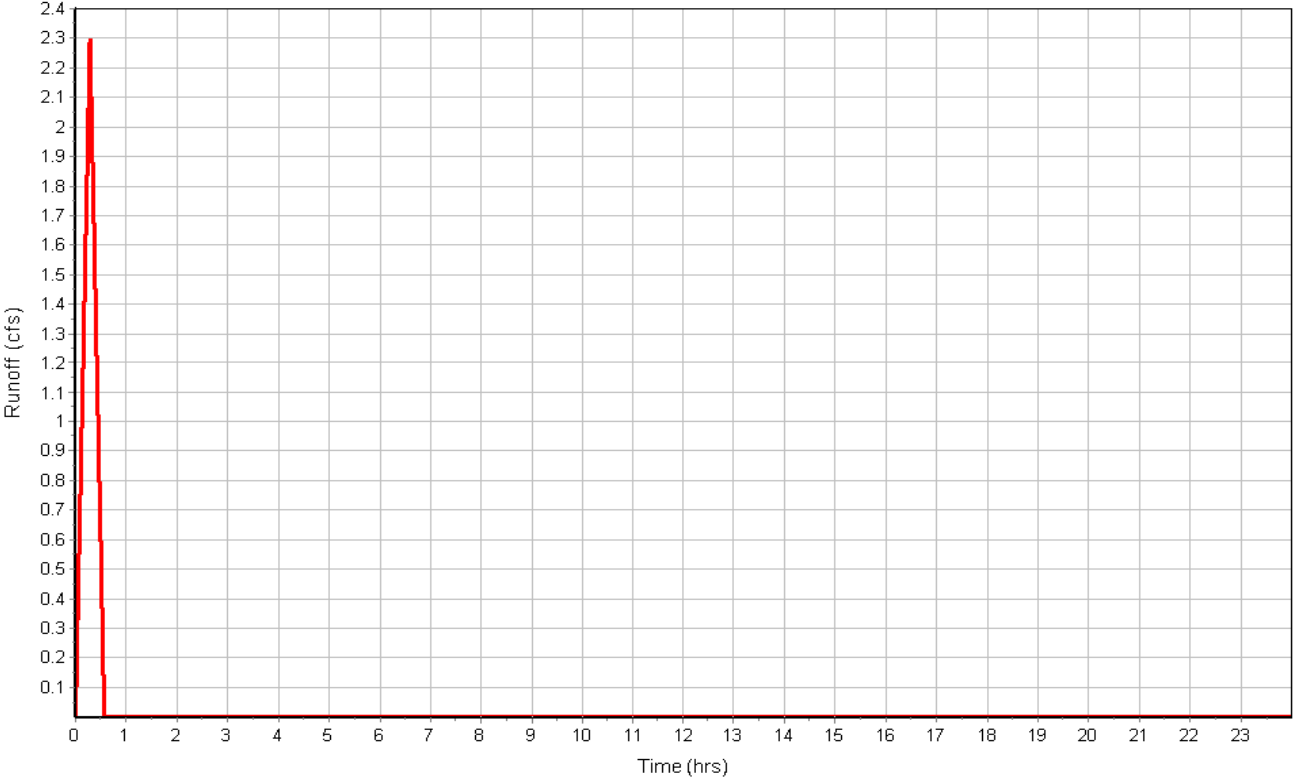
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	576.52	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	2.73	0.00	0.00
Total TOC (min)	17.08		

Subbasin Runoff Results

Total Rainfall (in) 2.06
 Total Runoff (in) 1.42
 Peak Runoff (cfs) 2.30
 Rainfall Intensity 7.278
 Weighted Runoff Coefficient 0.6900
 Time of Concentration (days hh:mm:ss) 0 00:17:05

Subbasin : {STORM-BASINS}.5

Runoff Hydrograph



Subbasin : {STORM-BASINS}.6

Input Data

Area (ac) 1.73
Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.73	-	0.60
Composite Area & Weighted Runoff Coeff.	1.73		0.60

Time of Concentration

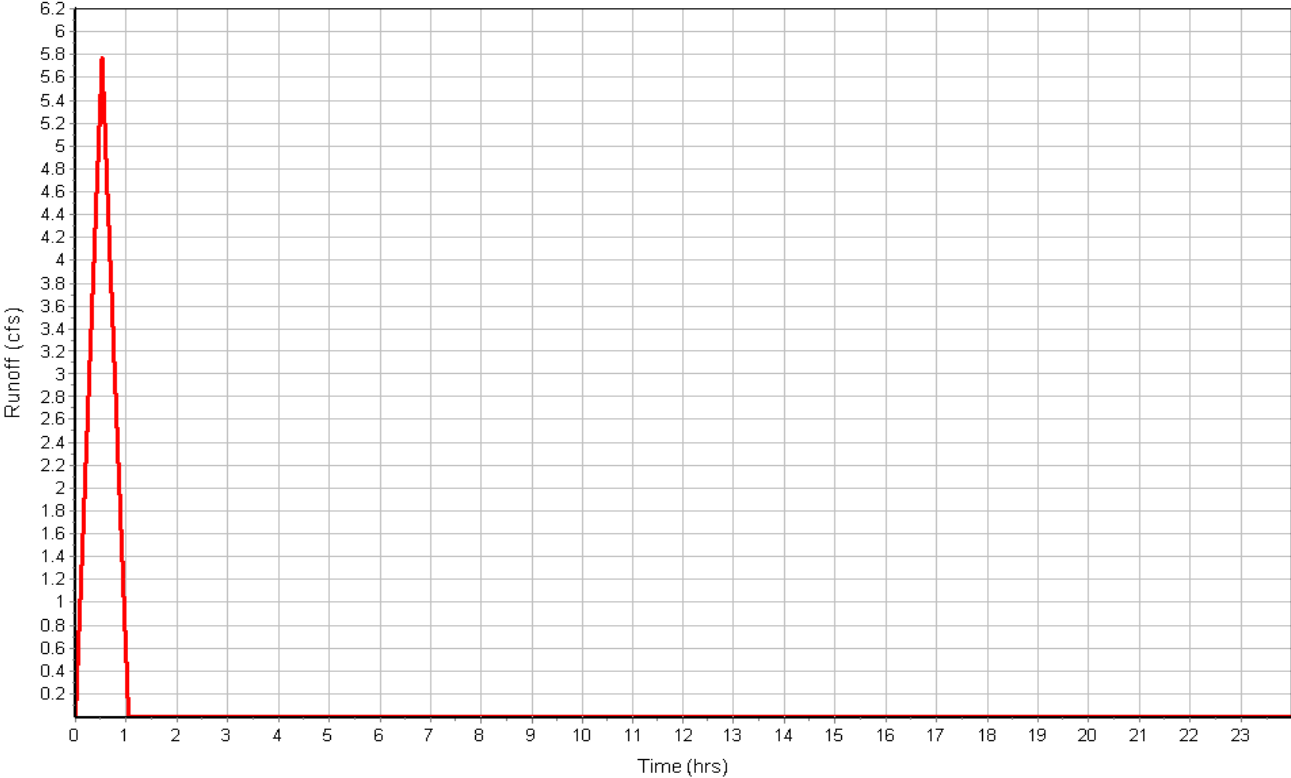
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	501.59	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	31.27	0.00	0.00
Total TOC (min)	31.27		

Subbasin Runoff Results

Total Rainfall (in) 2.91
Total Runoff (in) 1.74
Peak Runoff (cfs) 5.77
Rainfall Intensity 5.563
Weighted Runoff Coefficient 0.6000
Time of Concentration (days hh:mm:ss) 0 00:31:16

Subbasin : {STORM-BASINS}.6

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7A

Input Data

Area (ac) 0.38
 Weighted Runoff Coefficient 0.6600

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.30	-	0.60
-	0.08	-	0.90
Composite Area & Weighted Runoff Coeff.	0.38		0.66

Time of Concentration

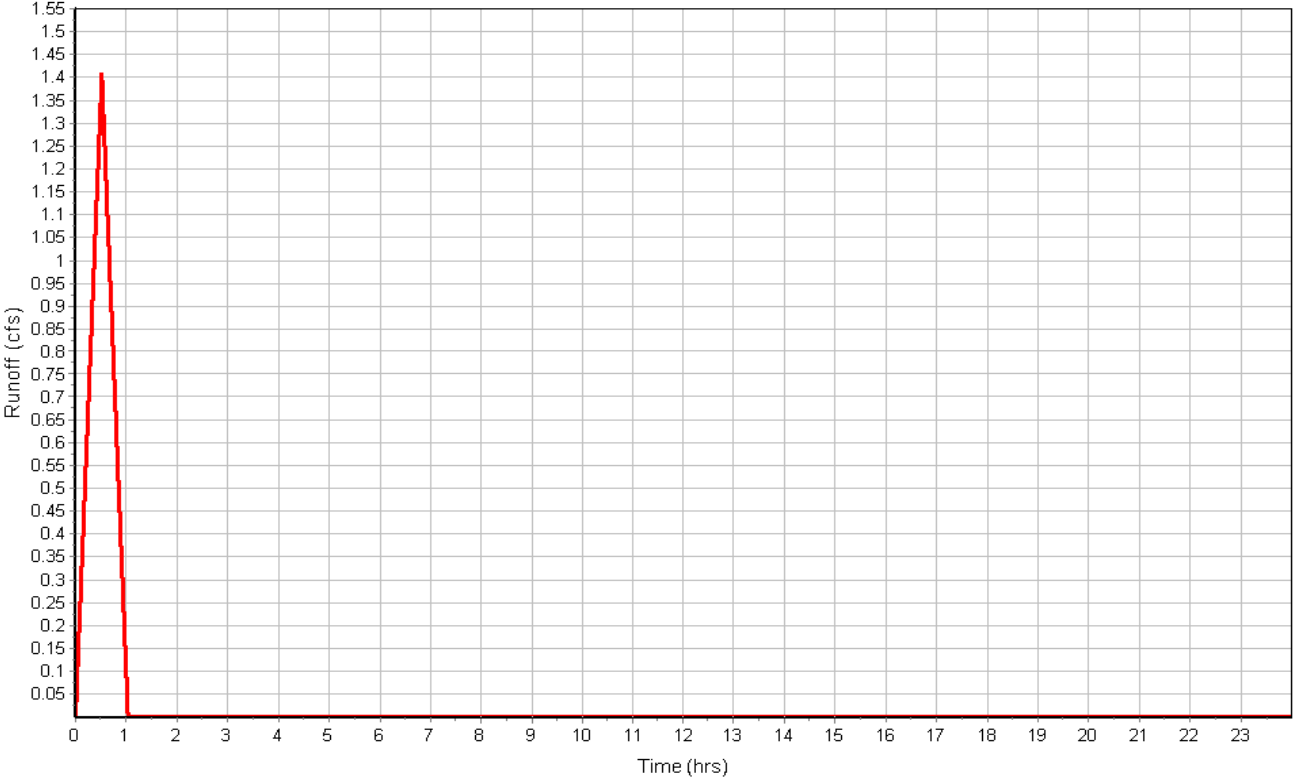
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	419.02	0.00	0.00
Slope (%) :	2.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.23	0.00	0.00
Computed Flow Time (min) :	30.98	0.00	0.00
Total TOC (min)	30.98		

Subbasin Runoff Results

Total Rainfall (in) 2.89
 Total Runoff (in) 1.91
 Peak Runoff (cfs) 1.41
 Rainfall Intensity 5.594
 Weighted Runoff Coefficient 0.6600
 Time of Concentration (days hh:mm:ss) 0 00:30:59

Subbasin : {STORM-BASINS}.7A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7B

Input Data

Area (ac) 0.28
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.17	-	0.60
-	0.11	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.72

Time of Concentration

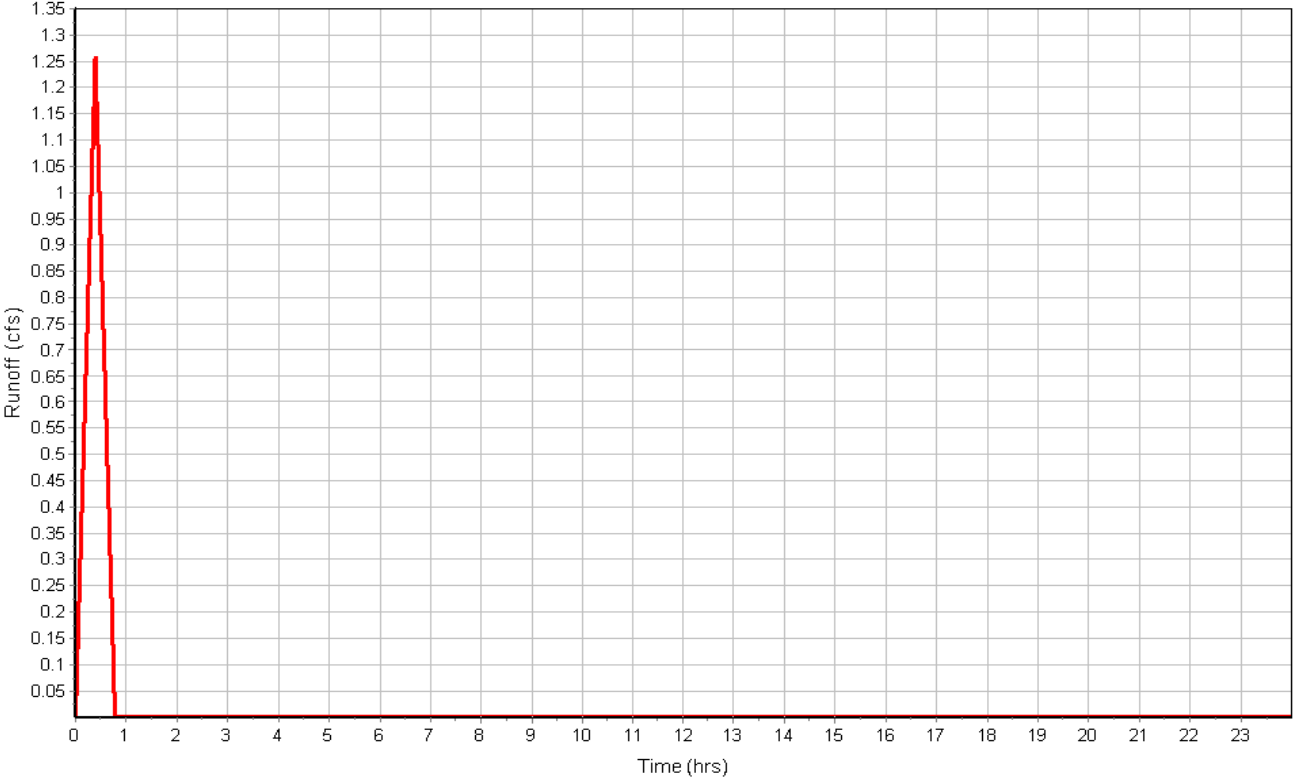
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	282.86	0.00	0.00
Slope (%) :	2.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	23.39	0.00	0.00
Total TOC (min)	23.39		

Subbasin Runoff Results

Total Rainfall (in) 2.47
 Total Runoff (in) 1.78
 Peak Runoff (cfs) 1.26
 Rainfall Intensity 6.350
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:23:23

Subbasin : {STORM-BASINS}.7B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.8

Input Data

Area (ac) 2.66
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	2.66	-	0.60
Composite Area & Weighted Runoff Coeff.	2.66		0.60

Time of Concentration

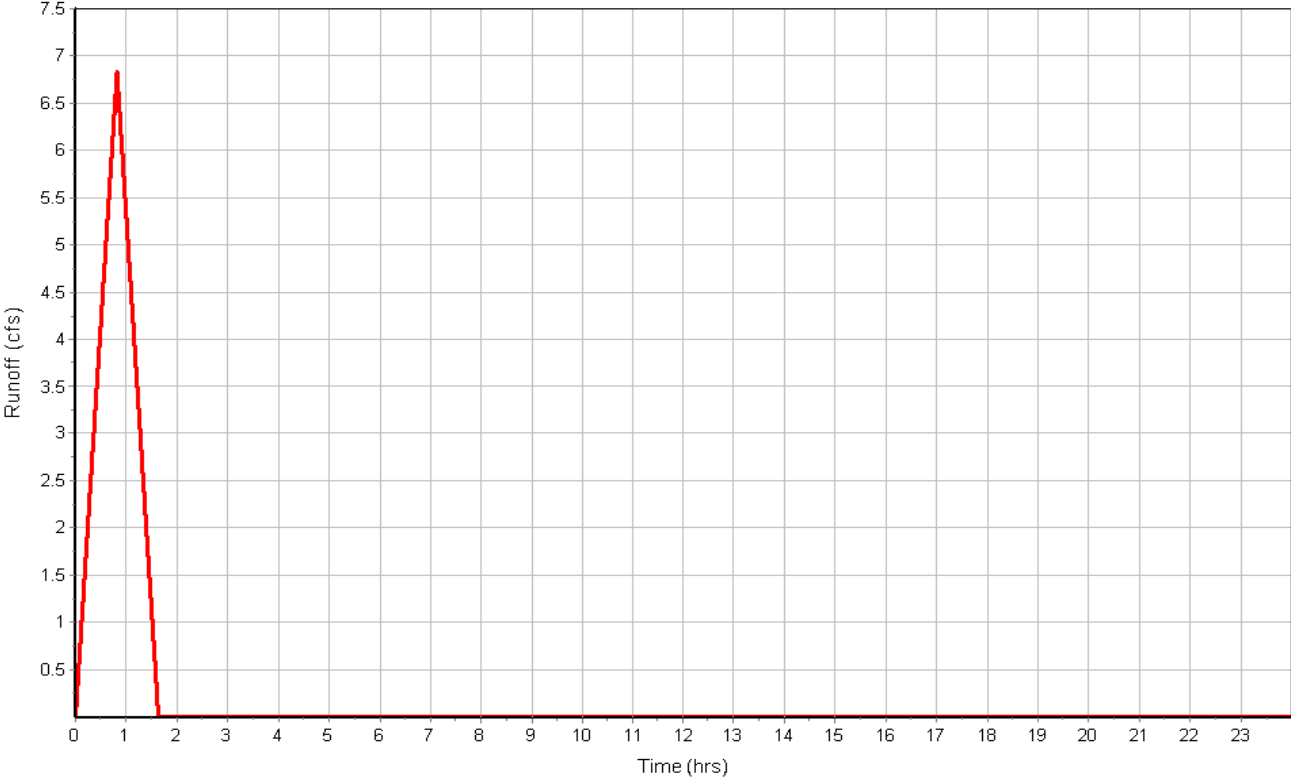
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	801.79	0.00	0.00
Slope (%) :	2.9	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	49.06	0.00	0.00
Total TOC (min)	49.06		

Subbasin Runoff Results

Total Rainfall (in) 3.49
 Total Runoff (in) 2.10
 Peak Runoff (cfs) 6.83
 Rainfall Intensity 4.275
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:49:04

Subbasin : {STORM-BASINS}.8

Runoff Hydrograph



Subbasin : {STORM-BASINS}.9

Input Data

Area (ac) 0.06
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.06	-	0.90
Composite Area & Weighted Runoff Coeff.	0.06		0.90

Time of Concentration

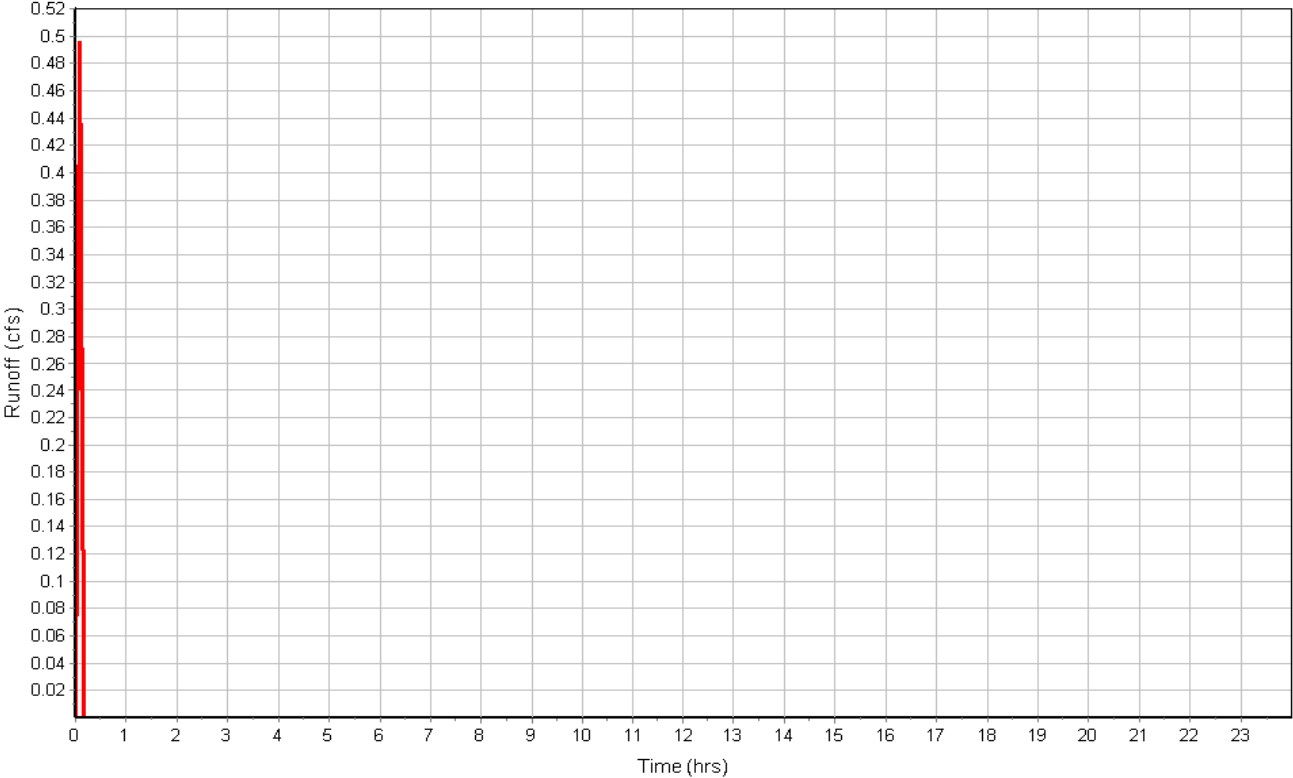
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	93.99	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	0.55	0.00	0.00
Total TOC (min)0.55			

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.75
 Peak Runoff (cfs) 0.50
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:00:33

Subbasin : {STORM-BASINS}.9

Runoff Hydrograph



Junction Input

SN Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft ²)	Minimum Pipe Cover (in)
1 CB-I1	476.43	480.49	4.06	476.43	0.00	480.49	0.00	0.00	24.66
2 CONNECT-G	483.22	485.22	2.00	483.22	0.00	485.22	-0.01	0.00	0.00
3 CONNECT-I	483.38	489.38	6.00	483.38	0.00	489.38	0.00	0.00	54.00
4 FES-H2	482.37	485.12	2.75	482.37	0.00	485.12	0.00	0.00	9.00
5 Jun-01	473.29	477.00	3.71	473.29	0.00	477.00	0.00	0.00	0.00

Junction Results

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 CB-I1	12.03	0.00	477.72	1.29	0.00	2.76	476.48	0.05	0 00:40	0 00:00	0.00	0.00
2 CONNECT-G	8.34	0.00	484.20	0.98	0.00	1.03	483.26	0.04	0 00:31	0 00:00	0.00	0.00
3 CONNECT-I	5.43	0.00	483.96	0.58	0.00	5.42	483.39	0.01	0 00:05	0 00:00	0.00	0.00
4 FES-H2	20.31	0.00	483.46	1.09	0.00	1.66	482.39	0.02	0 00:06	0 00:00	0.00	0.00
5 Jun-01	29.66	0.00	475.33	2.04	0.00	1.67	473.42	0.13	0 00:50	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	Gutter-05	200.35	495.00	4.05	487.00	2.90	8.00	3.9900	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Gutter-06	200.99	495.00	4.37	487.00	3.22	8.00	3.9800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Gutter-07	239.28	487.00	3.22	485.61	3.25	1.39	0.5800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Gutter-08	240.40	485.61	3.25	480.15	3.25	5.46	2.2700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Gutter-09	57.48	480.15	3.25	478.65	3.80	1.50	2.6100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Gutter-10	192.99	480.66	4.57	478.79	3.94	1.87	0.9700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Gutter-12	213.95	483.97	4.97	479.50	2.59	4.47	2.0900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Gutter-13	213.94	491.00	4.00	483.97	4.97	7.03	3.2900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Gutter-14	201.82	500.50	3.77	491.00	4.00	9.50	4.7100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Gutter-15	201.21	500.50	2.90	491.00	3.43	9.50	4.7200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Gutter-16	425.27	491.00	3.43	482.00	3.93	9.00	2.1200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Gutter-17	292.35	485.12	1.74	480.66	4.57	4.46	1.5200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Gutter-23	587.46	487.00	2.90	479.00	4.50	8.00	1.3600	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Gutter-26	57.06	490.37	6.49	485.12	1.74	5.25	9.2000	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 Gutter-05	0.50	0 00:16	9.52	0.05	3.49	0.96	0.16	0.33	0.00		
2 Gutter-06	1.46	0 00:18	9.50	0.15	4.07	0.82	0.24	0.49	0.00		
3 Gutter-07	1.69	0 00:33	3.83	0.44	1.93	2.07	0.36	0.72	0.00		
4 Gutter-08	0.20	0 00:35	7.18	0.03	2.40	1.67	0.13	0.25	0.00		
5 Gutter-09	0.00	0 00:00	7.33	0.00	0.00		0.00	0.00	0.00		
6 Gutter-10	0.28	0 00:07	4.69	0.06	2.64	1.22	0.16	0.32	0.00		
7 Gutter-12	0.26	0 00:29	6.51	0.04	2.10	1.70	0.15	0.29	0.00		
8 Gutter-13	0.00	0 00:00	9.03	0.00	0.00		0.00	0.00	0.00		
9 Gutter-14	0.20	0 00:06	10.29	0.02	4.17	0.81	0.11	0.21	0.00		
10 Gutter-15	0.48	0 00:06	10.48	0.05	4.77	0.70	0.15	0.30	0.00		
11 Gutter-16	0.00	0 00:06	7.04	0.00	0.00		0.00	0.01	0.00		
12 Gutter-17	0.47	0 00:19	5.88	0.08	2.45	1.99	0.19	0.37	0.00		
13 Gutter-23	0.84	0 00:35	5.55	0.15	2.90	3.38	0.24	0.48	0.00		
14 Gutter-26	1.33	0 00:16	14.45	0.09	3.51	0.27	0.20	0.41	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	ST-C1	92.51	483.78	0.00	483.22	0.00	0.56	0.6000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
2	ST-C2	200.00	490.63	0.00	483.88	0.10	6.75	3.3800	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	ST-C3	32.02	490.95	0.00	490.63	0.00	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	ST-CS1	24.64	473.29	0.00	473.16	0.00	0.13	0.5300	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5	ST-D1	32.02	484.10	0.00	483.88	0.10	0.22	0.6900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6	ST-E1 (2)	133.90	487.00	0.00	483.38	0.00	3.62	2.7000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
7	ST-E2 (EXIST)	200.00	496.73	0.00	487.10	0.10	9.63	4.8100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8	ST-E3 (EXIST)	32.02	497.60	0.00	496.83	0.10	0.77	2.4000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9	ST-F1 (EXIST)	32.02	487.57	0.00	487.10	0.10	0.47	1.4600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10	ST-G1	72.10	474.50	0.00	473.92	0.63	0.58	0.8000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11	ST-G2	31.99	474.85	0.00	474.50	0.00	0.35	1.0900	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12	ST-G3	49.09	476.90	0.00	474.95	0.10	1.95	3.9700	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13	ST-G4	238.61	482.36	0.00	476.90	0.00	5.46	2.2900	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14	ST-G5	145.74	483.22	0.00	482.35	-0.01	0.88	0.6000	CIRCULAR	24.000	24.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
15	ST-H1	190.63	476.09	0.00	474.95	0.10	1.14	0.6000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
16	ST-H2	252.90	482.37	0.00	476.19	0.10	6.18	2.4400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17	ST-H2A	37.10	483.38	0.00	482.37	0.00	1.01	2.7200	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18	ST-H3	48.08	483.88	0.00	483.38	0.00	0.50	1.0400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19	ST-H5	378.49	485.87	0.00	483.98	0.10	1.89	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20	ST-H6	32.00	488.21	0.00	487.89	2.02	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21	ST-I1	48.08	476.43	0.00	476.19	0.10	0.24	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22	ST-I2	95.00	476.91	0.00	476.43	0.00	0.48	0.5100	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23	ST-I3	212.56	479.00	0.00	477.00	0.09	2.00	0.9400	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24	ST-I4	78.66	483.38	0.00	481.27	2.27	2.11	2.6900	CIRCULAR	18.000	18.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
25	ST-K1	32.05	477.32	-0.75	477.00	0.09	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 ST-C1	8.34	0 00:31	17.52	0.48	5.51	0.28	0.97	0.49	0.00		Calculated
2 ST-C2	1.20	0 00:17	19.30	0.06	7.44	0.45	0.25	0.17	0.00		Calculated
3 ST-C3	0.47	0 00:14	10.50	0.04	3.04	0.18	0.22	0.14	0.00		Calculated
4 ST-CS1	29.66	0 00:51	29.79	1.00	6.92	0.06	2.04	0.82	0.00		Calculated
5 ST-D1	3.75	0 00:31	8.71	0.43	4.75	0.11	0.69	0.46	0.00		Calculated
6 ST-E1 (2)	5.43	0 00:05	17.26	0.31	8.67	0.26	0.58	0.39	0.00		Calculated
7 ST-E2 (EXIST)	2.60	0 00:05	23.05	0.11	8.71	0.38	0.34	0.23	0.00		Calculated
8 ST-E3 (EXIST)	1.44	0 00:05	16.27	0.09	6.64	0.08	0.30	0.20	0.00		Calculated
9 ST-F1 (EXIST)	1.78	0 00:05	12.70	0.14	5.07	0.11	0.38	0.25	0.00		Calculated
10 ST-G1	39.68	0 00:07	36.79	1.08	8.80	0.14	2.31	0.92	0.00		> CAPACITY
11 ST-G2	36.11	0 00:07	42.90	0.84	9.80	0.05	1.76	0.70	0.00		Calculated
12 ST-G3	12.00	0 00:32	45.08	0.27	12.14	0.07	0.70	0.35	0.00		Calculated
13 ST-G4	11.09	0 00:32	34.22	0.32	9.73	0.41	0.78	0.39	0.00		Calculated
14 ST-G5	8.33	0 00:31	17.44	0.48	5.50	0.44	0.97	0.49	0.00		Calculated
15 ST-H1	31.40	0 00:07	31.72	0.99	7.55	0.42	2.02	0.81	0.00		Calculated
16 ST-H2	20.24	0 00:06	35.36	0.57	11.76	0.36	1.08	0.54	0.00		Calculated
17 ST-H2A	20.31	0 00:06	37.32	0.54	12.14	0.05	1.05	0.53	0.00		Calculated
18 ST-H3	18.96	0 00:06	23.11	0.82	8.23	0.10	1.38	0.69	0.00		Calculated
19 ST-H5	17.31	0 00:06	16.01	1.08	6.39	0.99	1.85	0.92	0.00		> CAPACITY
20 ST-H6	5.82	0 00:35	10.50	0.55	6.10	0.09	0.80	0.53	0.00		Calculated
21 ST-I1	12.03	0 00:40	16.00	0.75	5.60	0.14	1.29	0.65	0.00		Calculated
22 ST-I2	12.03	0 00:40	16.08	0.75	5.63	0.28	1.29	0.64	0.00		Calculated
23 ST-I3	6.03	0 00:06	10.19	0.59	6.07	0.58	0.83	0.55	0.00		Calculated
24 ST-I4	5.42	0 00:05	17.22	0.31	8.64	0.15	0.58	0.39	0.00		Calculated
25 ST-K1	10.19	0 00:40	19.20	0.53	11.02	0.05	0.78	0.52	0.00		Calculated

Inlet Input

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft ²)	Grate Clogging Factor (%)	
1 CB-C1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.78	487.16	3.38	483.78	0.00	N/A	0.00
2 CB-C2 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	490.63	495.14	4.51	490.63	0.00	N/A	0.00
3 CB-C3 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	490.95	495.16	4.21	490.95	0.00	N/A	0.00
4 CB-D1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	484.10	487.17	3.07	484.10	0.00	N/A	0.00
5 CB-E1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	487.00	491.64	4.64	487.00	0.00	N/A	0.00
6 CB-E2 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	496.73	501.05	4.32	496.73	0.00	N/A	0.00
7 CB-E3 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	497.60	501.00	3.41	497.60	0.00	N/A	0.00
8 CB-F1 (EXIST)	FHWA HEC-22	GENERIC	N/A	On Grade	1	487.57	491.28	3.71	487.57	0.00	N/A	0.00
9 CB-G2	FHWA HEC-22	GENERIC	N/A	On Sag	1	474.50	479.18	4.68	474.50	0.00	0.00	0.00
10 CB-G3	FHWA HEC-22	GENERIC	N/A	On Sag	1	474.85	478.79	3.94	474.85	0.00	0.00	0.00
11 CB-G4	FHWA HEC-22	GENERIC	N/A	On Grade	1	476.90	480.15	3.25	476.90	0.00	N/A	0.00
12 CB-G5	FHWA HEC-22	GENERIC	N/A	On Grade	1	482.36	485.61	3.25	482.36	0.00	N/A	0.00
13 CB-H1	FHWA HEC-22	GENERIC	N/A	On Grade	1	476.09	480.66	4.57	476.09	0.00	N/A	0.00
14 CB-H2	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.38	485.12	1.74	483.38	0.00	N/A	0.00
15 CB-H3	FHWA HEC-22	GENERIC	N/A	On Grade	1	483.88	490.37	6.49	483.88	0.00	N/A	0.00
16 CB-H5	FHWA HEC-22	GENERIC	N/A	On Sag	1	485.87	488.55	2.68	485.87	0.00	0.00	0.00
17 CB-H6	FHWA HEC-22	GENERIC	N/A	On Sag	1	488.21	488.55	0.35	488.21	0.00	0.00	0.00
18 CB-I2	FHWA HEC-22	GENERIC	N/A	On Sag	1	476.91	479.97	3.06	476.91	0.00	0.00	0.00
19 CB-I3	FHWA HEC-22	GENERIC	N/A	On Grade	1	479.00	483.97	4.97	479.00	0.00	N/A	0.00
20 CB-K1	FHWA HEC-22	GENERIC	N/A	On Sag	1	478.07	482.00	3.93	478.07	0.00	0.00	0.00

Roadway & Gutter Input

SN Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1 CB-C1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
2 CB-C2 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
3 CB-C3 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
4 CB-D1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
5 CB-E1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
6 CB-E2 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
7 CB-E3 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
8 CB-F1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
9 CB-G2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
10 CB-G3	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
11 CB-G4	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
12 CB-G5	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
13 CB-H1	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
14 CB-H2	0.0100	0.0200	0.0160	0.0620	1.50	0.1969	12.00
15 CB-H3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
16 CB-H5	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
17 CB-H6	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
18 CB-I2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
19 CB-I3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
20 CB-K1	N/A	0.0200	0.0130	0.0833	1.50	0.1969	12.00

Inlet Results

SN Element ID	Peak Flow	Peak Lateral Inflow	Peak Flow Intercepted by Inlet	Peak Flow Bypassing Inlet	Inlet Efficiency during Peak	Max Gutter Spread during Peak	Max Gutter Water Elev. during Peak	Max Gutter Water Depth during Peak	Time of Max Depth Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)
1 CB-C1 (EXIST)	6.05	5.76	4.30	1.75	71.14	11.17	487.45	0.29	0 00:31	0.00	0.00
2 CB-C2 (EXIST)	2.30	2.30	0.78	1.51	34.14	4.35	495.38	0.24	0 00:17	0.00	0.00
3 CB-C3 (EXIST)	1.00	1.00	0.47	0.53	47.09	3.10	495.34	0.18	0 00:14	0.00	0.00
4 CB-D1 (EXIST)	4.76	4.73	3.76	1.01	78.85	10.14	487.43	0.27	0 00:31	0.00	0.00
5 CB-E1 (EXIST)	1.07	1.03	1.07	0.00	100.00	5.32	491.81	0.17	0 00:05	0.00	0.00
6 CB-E2 (EXIST)	1.48	1.48	1.19	0.29	80.49	6.18	501.24	0.19	0 00:05	0.00	0.00
7 CB-E3 (EXIST)	2.07	2.07	1.44	0.63	69.70	7.17	501.21	0.21	0 00:05	0.00	0.00
8 CB-F1 (EXIST)	1.78	1.55	1.78	0.00	99.99	6.70	491.47	0.20	0 00:05	0.00	0.00
9 CB-G2	3.79	3.79	N/A	N/A	N/A	11.12	479.97	0.79	0 00:06	0.00	0.00
10 CB-G3	6.83	6.83	N/A	N/A	N/A	16.50	479.68	0.89	0 00:07	0.00	0.00
11 CB-G4	1.26	1.26	1.26	0.00	100.00	5.71	480.33	0.18	0 00:32	0.00	0.00
12 CB-G5	3.02	1.41	2.80	0.22	92.80	8.42	485.85	0.23	0 00:31	0.00	0.00
13 CB-H1	1.75	1.75	1.31	0.44	74.91	6.64	480.86	0.20	0 00:06	0.00	0.00
14 CB-H2	2.39	1.15	1.83	0.56	76.44	9.60	485.37	0.26	0 00:06	0.00	0.00
15 CB-H3	3.14	3.14	1.79	1.35	57.08	8.55	490.60	0.23	0 00:06	0.00	0.00
16 CB-H5	14.55	14.55	N/A	N/A	N/A	27.05	489.66	1.10	0 00:04	0.00	0.00
17 CB-H6	5.82	5.82	N/A	N/A	N/A	14.82	489.41	0.86	0 00:01	0.00	0.00
18 CB-I2	0.49	0.49	N/A	N/A	N/A	2.27	480.29	0.32	0 00:40	0.00	0.00
19 CB-I3	3.26	3.26	2.96	0.31	90.52	8.69	484.20	0.24	0 00:05	0.00	0.00
20 CB-K1	10.19	10.19	N/A	N/A	N/A	21.54	483.03	1.03	0 00:40	0.00	0.00

Storage Nodes

Storage Node : POND1

Input Data

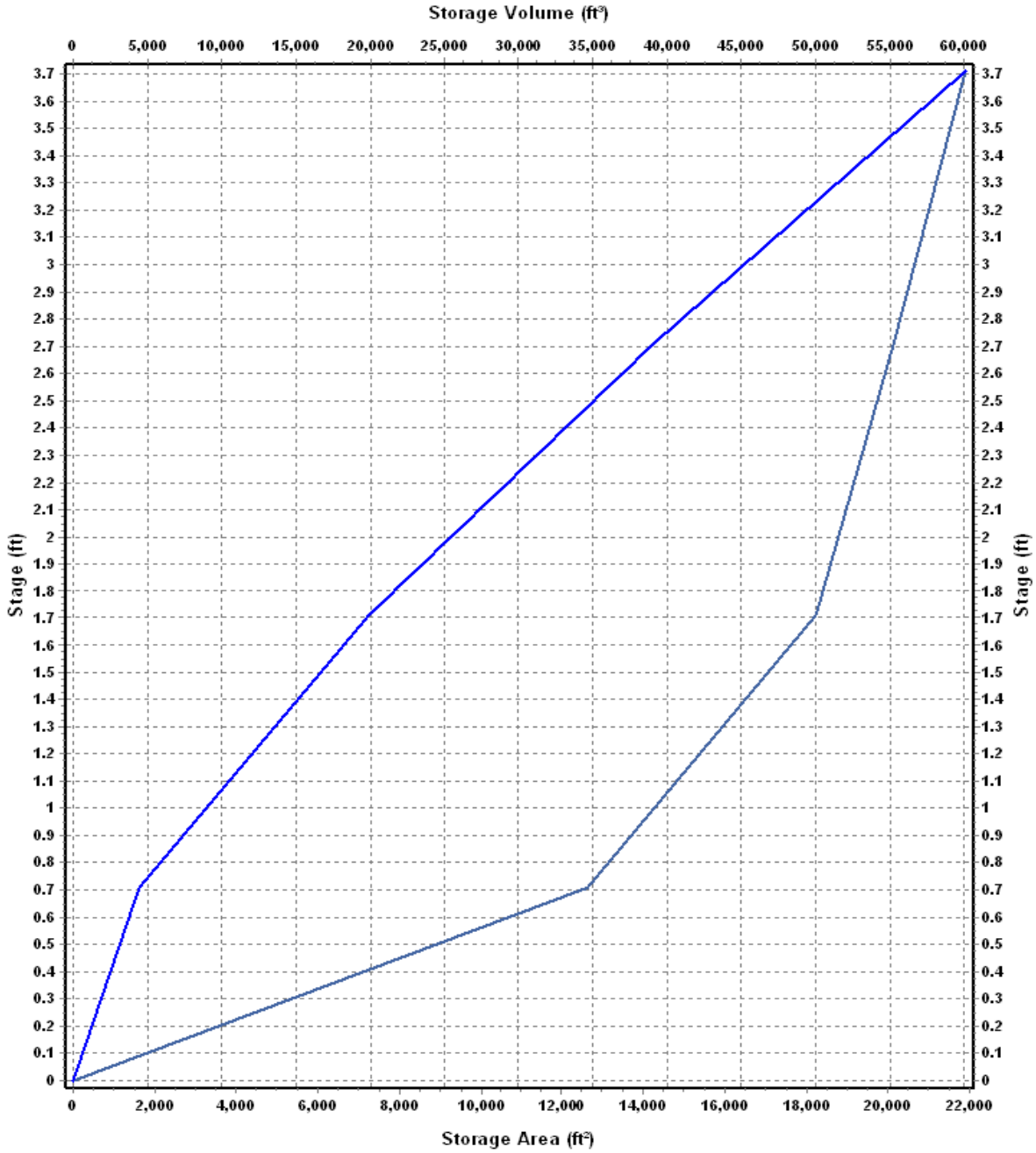
Invert Elevation (ft)	473.29
Max (Rim) Elevation (ft)	477.00
Max (Rim) Offset (ft)	3.71
Initial Water Elevation (ft)	473.29
Initial Water Depth (ft)	0.00
Ponded Area (ft ²)	0.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : POND1

Stage (ft)	Storage Area (ft ²)	Storage Volume (ft ³)
0	0	0.000
0.71	12615	4478.33
1.71	18216	19893.83
2.71	20116	39059.83
3.71	21896	60065.83

Storage Area Volume Curves



— Storage Area — Storage Volume

Storage Node : POND1 (continued)

Outflow Weirs

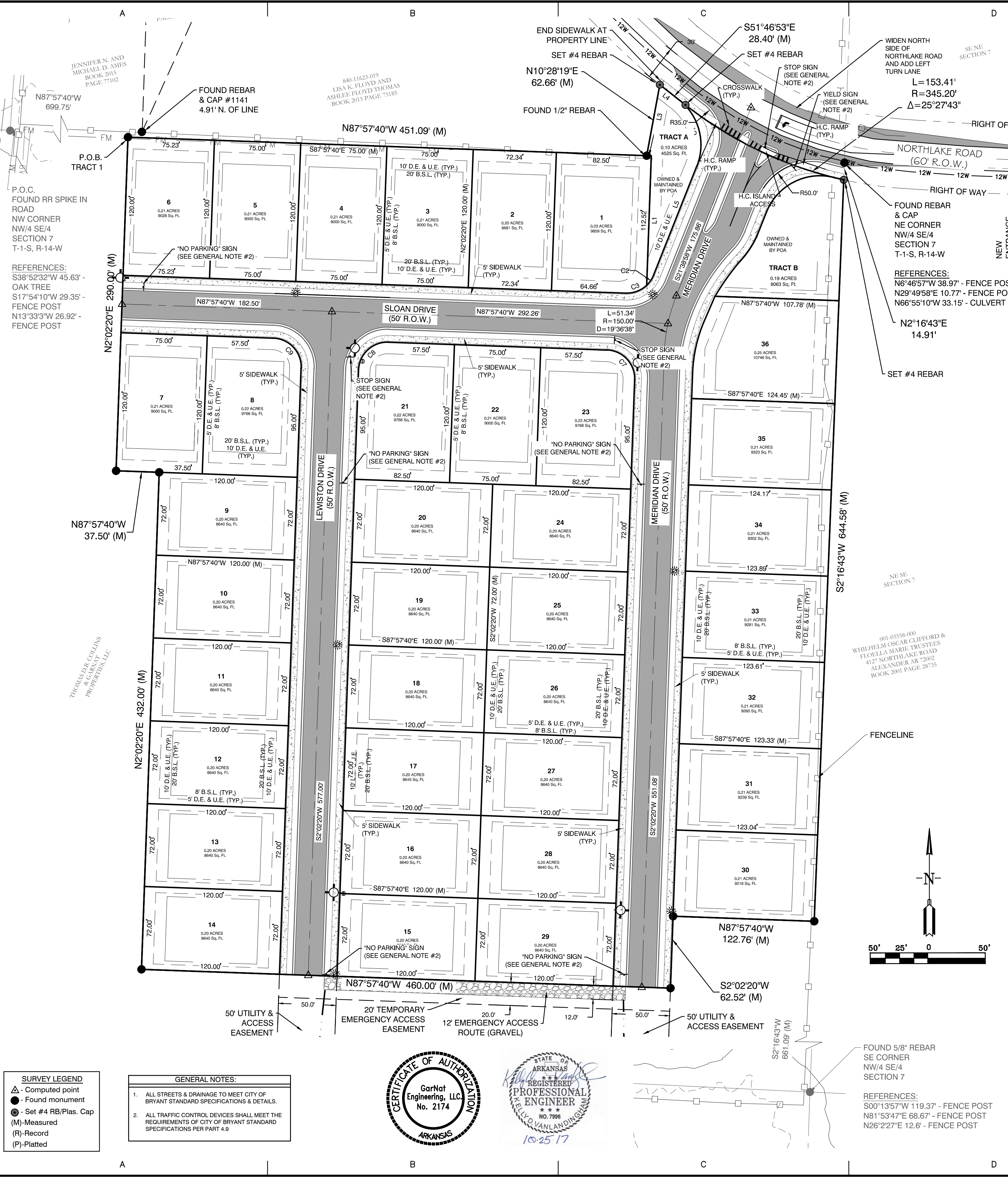
SN Element ID	Weir Type	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1 Weir-02	Rectangular	No	476.00	2.71	15.00	1.00	3.33

Outflow Orifices

SN Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1 Orifice-01	Side	Rectangular	No		26.50	21.00	0.00	0.63

Output Summary Results

Peak Inflow (cfs)	40.21
Peak Lateral Inflow (cfs)	4.94
Peak Outflow (cfs)	29.66
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	476.18
Max HGL Depth Attained (ft)	2.89
Average HGL Elevation Attained (ft)	473.48
Average HGL Depth Attained (ft)	0.19
Time of Max HGL Occurrence (days hh:mm)	0 00:50
Total Exfiltration Volume (1000-ft ³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00



Curve Table

Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C3	19.86'	25.00'	45.31'	S69°16'44"W	19.34'
C9	39.27'	25.00'	90.00'	S42°57'40"E	35.36'
C7	39.27'	25.00'	90.00'	S42°57'40"E	35.36'
C8	39.27'	25.00'	90.00'	N47°02'20"E	35.36'
C1	63.29'	50.00'	72.31'	N14°36'41"W	59.15'
C2	10.85'	25.00'	24.52'	N34°05'03"E	10.77'

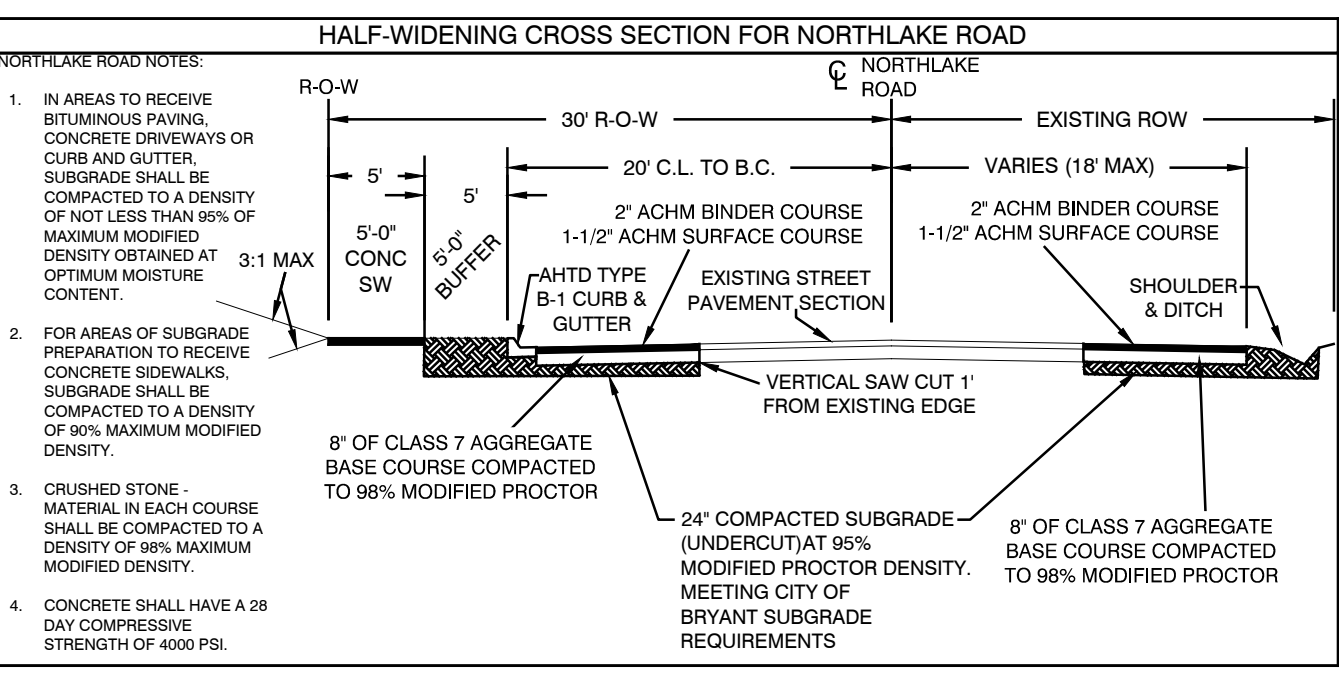
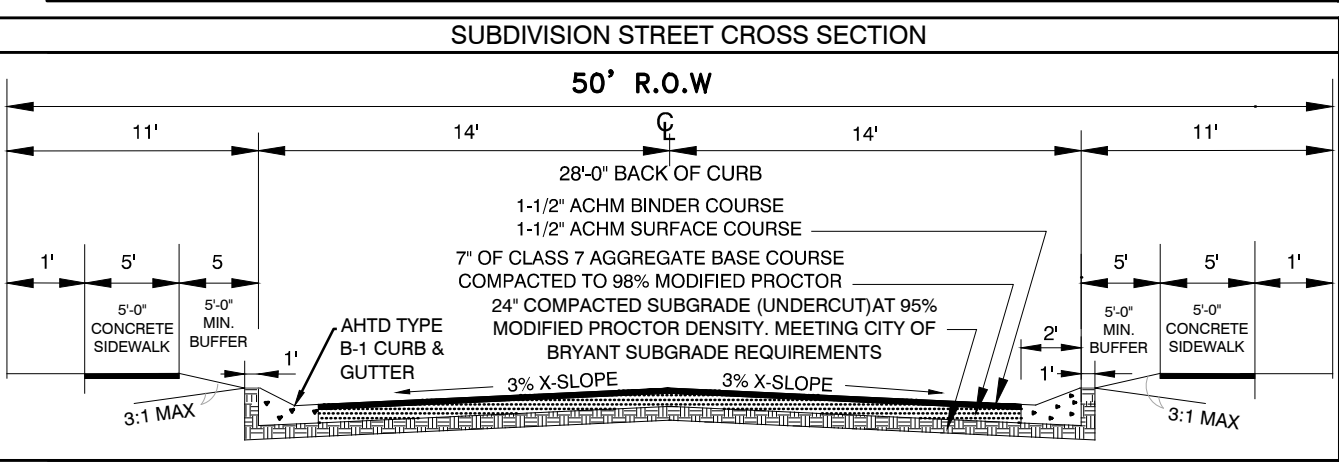
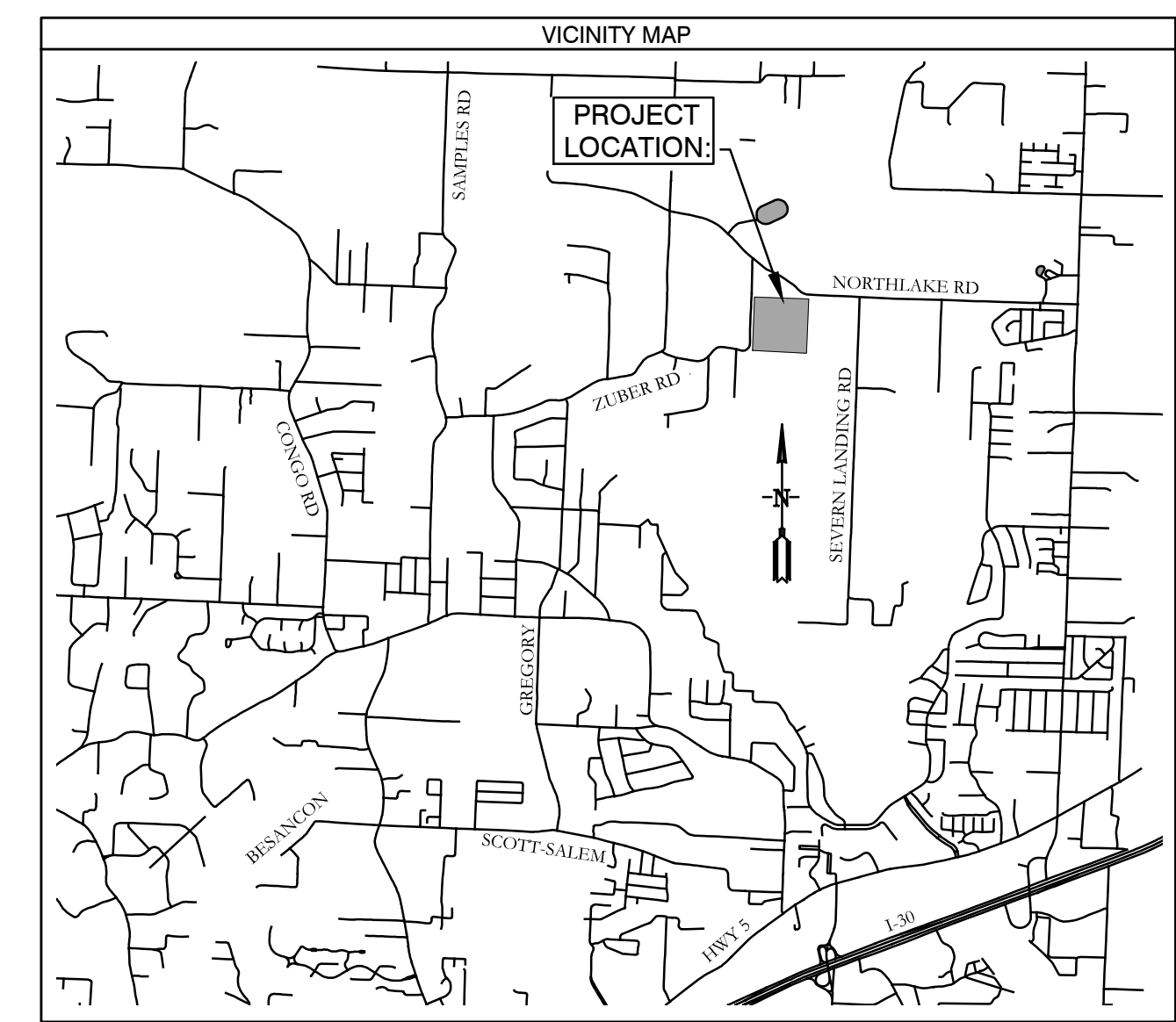
PROPERTY DESCRIPTION:

ALL OF THE NORTHWEST QUARTER OF SOUTHWEST QUARTER (NW/4 SE/4) OF SECTION 7, TOWNSHIP 1 SOUTH, RANGE 14 WEST, DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF THE NW/4 SE/4, A FOUND RAILROAD SPIKE; THENCE, ALONG THE NORTH LINE OF SAID NW/4 SE/4, S87°57'40"E A DISTANCE OF 699.75 FEET TO A SET REBAR AND CAP, AND ALSO THE POINT OF BEGINNING; THENCE S87°57'40"E A DISTANCE OF 451.09 FEET TO A SET REBAR AND CAP; THENCE LEAVING THE SAID NORTH LINE OF THE NW/4 SE/4 AND ALONG THE EAST LINE OF THE NW/4 SE/4, N10°28'19"E A DISTANCE OF 62.66 FEET TO A SET REBAR AND CAP; THENCE S51°46'53"E A DISTANCE OF 28.40 FEET TO A SET REBAR AND CAP; THENCE ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 345.20 FEET, A DELTA ANGLE OF 25°27'43", AND WHOSE LONG CHORD BEARS S64°40'56"E A DISTANCE OF 152.15 FEET TO THE EAST LINE OF THE NW/4 SE/4; THENCE, ALONG SAID EAST LINE OF THE NW/4 SE/4, S2°16'43"W A DISTANCE OF 644.58 FEET; THENCE, LEAVING SAID EAST LINE OF THE NW/4 SE/4, N87°57'40"W A DISTANCE OF 122.78 FEET TO A SET REBAR AND CAP; THENCE S2°20'20"W A DISTANCE OF 62.52 FEET TO A SET REBAR AND CAP; THENCE N87°57'40"W A DISTANCE OF 460.00 FEET TO A SET REBAR AND CAP; THENCE N2°22'00"E A DISTANCE OF 432.00 FEET TO A SET REBAR AND CAP; THENCE N87°57'40"W A DISTANCE OF 37.50 FEET TO A SET REBAR AND CAP; THENCE N2°22'00"E A DISTANCE OF 290.00 FEET TO THE NORTH LINE OF THE NW/4 SE/4, AND THE POINT OF BEGINNING, CONTAINING 9.82 ACRES, OR 427,836 SQ. FEET, MORE OR LESS.

Parcel Line Table

Line #	Length	Direction
L1	112.52	S2°02'20"W
L2	3.98	S87°57'40"E
L3	62.66	S10°28'19"W
L4	21.90	N51°53'29"W
L5	101.72	N21°38'58"E

PROPERTY SPECIFICATIONS:
 ZONING CLASSIFICATION: R-1-S
 MIN. LOT SIZE: 6,840 S.F.
 NUMBER OF LOTS: 36
 SOURCE OF WATER: SALEM WATER
 SOURCE OF SEWER: CITY OF BRYANT
 BUILDING SETBACKS:
 FRONT - 20' OR AS SHOWN
 REAR - 20' OR AS SHOWN
 SIDE - 8' OR AS SHOWN
 EASEMENTS: UTILITY & DRAINAGE (D.E. & U.E.)
 FRONT - 10' OR AS SHOWN
 REAR - 10' OR AS SHOWN
 SIDE - 5' OR AS SHOWN
 STREET RIGHT OF WAY: 30' OR AS SHOWN
 STREET WIDTH: 28' BOC TO BOC
 LOT CORNERS: SET #4 REBAR WITH CAP
 TRACTS A & B WILL BE OWNED & MAINTAINED BY PROPERTY OWNERS ASSOCIATION



BASIS OF BEARINGS:
 NAD 83 ARKANSAS GRID SOUTH ZONE (GPS)

CERTIFICATIONS:
 By affixing my seal and signature, I Kelly D. Vanlandingham, PLS No. 1447, hereby certify that this drawing correctly depicts a survey completed under my supervision dated 7/20/2016.
 According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Saline County unincorporated areas, panel # 05125C0225D dated 6/19/2012, no portion, dated of the property described hereon does lie within the 100 year flood hazard boundary.

PLAT CERTIFICATES:

OWNER: Thomas D.B. Collins, Ltd.
DEVELOPER: Thomas D.B. Collins, Ltd.
CERTIFICATE OF RECORDING: This document, number _____, filed for record _____, 20____, in Plat Book _____, Page _____.

CERTIFICATE OF OWNER: We, the undersigned, owners of the real estate shown and described herein do hereby certify that we have laid off, platted and subdivided, and do hereby lay off, plat and subdivide said real estate in accordance with the within plat.

Date: _____ Signed: _____
 Phillip Pengelli
 39 Walnut Valley, Little Rock, Arkansas 72211

Source of Title: _____ D.R. _____ Page _____

CERTIFICATE OF ENGINEERING ACCURACY:
 I, Kelly D. Vanlandingham, hereby certify that this plat correctly represents a survey and a plan made by me or under my supervision; that all monuments shown hereon actually exist and their locations, size, type, and material are correctly shown; and that all requirements of the City of Bryant Subdivision Rules and Regulations have been fully complied with.

Date: _____ Signed: _____
 Kelly D. Vanlandingham
 Registered Professional Engineer
 No. 7996, Arkansas

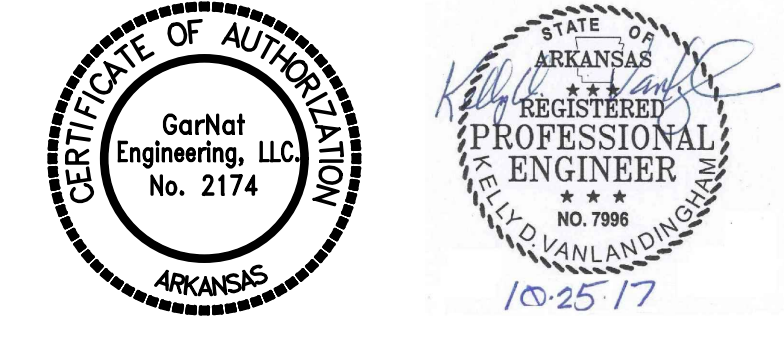
CERTIFICATE OF FINAL PLAT APPROVAL:
 Pursuant to the City of Bryant Subdivision Rules and Regulations, this document was given approval by the Bryant Planning Commission at a meeting held _____, 20____. All of the document is hereby accepted, and this certificate executed under the authority of said rules and regulations.

Approval of the final plat shall become null and void unless said plat is filed for record within one hundred twenty (120) days from the date of execution of this certificate.

Date of Execution: _____ Lance Penfield, Chairman
 Bryant Planning Commission

SURVEY LEGEND
 Δ - Computed point
 ● - Found monument
 ● - Set #4 RB/Plas. Cap
 (M) - Measured
 (R) - Record
 (P) - Platted

GENERAL NOTES:
 1. ALL STREETS & DRAINAGE TO MEET CITY OF BRYANT STANDARD SPECIFICATIONS & DETAILS.
 2. ALL TRAFFIC CONTROL DEVICES SHALL MEET THE REQUIREMENTS OF CITY OF BRYANT STANDARD SPECIFICATIONS PER PART 4.9



GNE Designing our client's success
GarNat Engineering, LLC
 P.O. Box 116 (72018)
 2909 Military Rd.
 Benton, AR 72015
 Ph (501) 408-4650
 Fax (888) 900-3068
 gnatengineering@gmail.com

REVISION
 REVISED PER CITY OF BRYANT COMMENTS
 AS BUILT

DATE
 9/22/2016
 10/25/17

BY
 JLV
 KDV

KENSINGTON PLACE SUBDIVISION,
 PHASE I,
 CITY OF BRYANT,
 SALINE COUNTY, ARKANSAS

CONTENTS:
FINAL PLAT

PROJECT NO:
 16044

DATE:
 OCT 25, 2017

SHEET NO:
 1

Designing our client's success

P.O. Box 116 (72018)
2909 Military Road
Benton, Arkansas 72015
PH: (501) 408-4650
FX: (888) 900-3068
garnatengineering@gmail.com

October 25, 2017

Truett Smith
Planning & Community Development
210 S.W. 3rd Street
Bryant, AR 72022

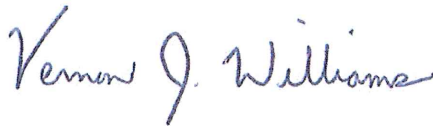
Re: Final Plat Certification
Kensington Place Subdivision Phase 1

Dear Mr. Smith:

Please allow this letter to serve as the certification for the referenced project required by Paragraph 15.12.05.a of the City of Bryant Subdivision Regulations. To that end, we certify that all improvements and installation to the subdivision required for its approval under the terms of the City of Bryant Subdivision Rules and Regulations have been made, added, or installed. Furthermore, these improvements were constructed in accordance with the approved plans and specifications.

If you have questions or need any additional information, please do not hesitate to contact us.

Sincerely,
GarNat Engineering, LLC



Vernon J. Williams, P.E., President

Thomas D.B. Collins



Phillip Pengelly

**BILL OF ASSURANCE
KENSINGTON PLACE SUBDIVISION**

PART A. PREAMBLE

WHEREAS, THOMAS D.B. COLLINS, LTD. is the Owner, by virtue of Instrument INST_NUM, of the following land situated in Saline County, Arkansas, to wit:

ALL OF THE NORTHWEST QUARTER OF SOUTHEAST QUARTER (NW/4 SE/4) OF SECTION 7; TOWNSHIP 1 SOUTH; RANGE 14 WEST; DESCRIBED AS FOLLOWS: **COMMENCING** AT THE NORTHWEST CORNER OF THE NW/4 SE/4, A FOUND RAILROAD SPIKE; THENCE, ALONG THE NORTH LINE OF SAID NW/4 SE/4, S87°57'40"E A DISTANCE OF 699.75 FEET TO A SET REBAR AND CAP, AND ALSO THE **POINT OF BEGINNING**; THENCE S87°57'40"E A DISTANCE OF 451.09 FEET TO A SET REBAR AND CAP; THENCE, LEAVING THE SAID NORTH LINE OF THE NW/4 SE/4 AND ALONG THE EAST LINE OF THE NW/4 SE/4, N10°28'19"E A DISTANCE OF 62.66 FEET TO A SET REBAR AND CAP; THENCE S51°46'53"E A DISTANCE OF 28.40 FEET TO A SET REBAR AND CAP; THENCE ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 345.20 FEET, A DELTA ANGLE OF 25° 27' 43", AND WHOSE LONG CHORD BEARS S64°40'56" E A DISTANCE OF 152.15 FEET TO THE EAST LINE OF THE NW/4 SE/4; THENCE, ALONG SAID EAST LINE OF THE NW/4 SE/4, S2°16'43"W A DISTANCE OF 644.58 FEET; THENCE, LEAVING SAID EAST LINE OF THE NW/4 SE/4, N87°57'40"W A DISTANCE OF 122.76 FEET TO A SET REBAR AND CAP; THENCE S2°2'20"W A DISTANCE OF 62.52 FEET TO A SET REBAR AND CAP; THENCE N87°57'40"W A DISTANCE OF 460.00 FEET TO A SET REBAR AND CAP; THENCE N2°2'20"E A DISTANCE OF 432.00 FEET TO A SET REBAR AND CAP; THENCE N87°57'40"W A DISTANCE OF 37.50 FEET TO A SET REBAR AND CAP; THENCE N2°2'20"E A DISTANCE OF 290.00 FEET TO THE NORTH LINE OF THE NW/4 SE/4, AND THE **POINT OF BEGINNING**. CONTAINING 9.82 ACRES, OR 427,636 SQ. FEET, MORE OR LESS.

WHEREAS, Owner has caused said land to be surveyed and a plat thereof made, dividing said land into lots as shown on said plat and showing the dimensions of each lot and the width of the streets as known as KENSINGTON PLACE SUBDIVISION, Saline County, Arkansas.

WHEREAS, the Saline County Real Estate Assessor and Office of Emergency Services have approved said Subdivision and road names.

NOW THEREFORE, Thomas D.B. Collins, Ltd., in consideration of the purposes herein stated, does hereby designate said land and make part hereof to be known as KENSINGTON PLACE SUBDIVISION, to the City of Bryant, Saline County, Arkansas, and that hereafter any conveyance by the Owners of said land by lot number shall forever be held to be good and legal description and the streets shown on said plat in said Subdivision are hereby and will become a public road to be accepted by Saline County for maintenance. The property owners of KENSINGTON PLACE SUBDIVISION are subject to and are joined as members of the establish KENSINGTON PLACE Property Owner's Association for the purpose of maintaining

and ownership of common areas and appurtenants belonging thereto. The use of the land in said Subdivision being subject to the following Protective and Restrictive Covenants:

PART B. AREA OF APPLICATION

B-1 FULLY PROTECTED RESIDENTIAL AREA. The residential area covenants in Part C in their entirety shall apply to the entire Subdivision.

PART C: RESIDENTIAL AREA COVENANTS:

C-1 LAND USE AND BUILDING TYPE. No lot shall be used except for residential purposes. Not business of any nature or kind shall at any time be conducted in any building located on any of the lots. No building shall be erected, altered, placed or allowed to remain on any lot other than one detached, single-family dwelling not to exceed two stories in height, excluding basement area. No lot can be subdivided for any purpose without the prior approval from the Saline County Planning Board and the consent of 51% of the voting members of the Property owners associations.

C-2 ARCHITECTURAL CONTROL. No dwelling or structure shall be erected, placed or altered on any lot until the construction plans and specifications and a plan showing the location of the structure, including landscaping, have been approved by the architectural control committee as to quality of workmanship and materials, harmony of external design with existing structures, and as to location with respect to topography and finish grade elevation, and intended objectives of the Architectural Control Committee to achieve a subdivision that accomplishes the desired architectural design in the structure and subdivision ascetics. No fence or wall shall be erected, placed or altered on any lot nearer than the setbacks as shown on the Plat. The term structure is defined to include any and all types of fences, antennas, decks, basketball goals, swimming pools and television satellite dishes, which in no event shall be placed in front of dwellings. Each property owner requesting approval shall submit to the Architectural Control Committee at least two weeks prior to the time approval is needed, a complete set of house plans and completed material and specifications list. Approval shall be a provided in Part D.

C-3. DWELLING COST, QUALITY AND SIZE. No dwelling shall be permitted on any lot unless the dwelling has at least 1,500 square feet, it being the intention and purpose of the covenants to assure that all dwellings shall be of a quality of workmanship and materials substantially the same or better than that for the minimum permitted dwelling size. Each dwelling shall have a minimum of a two car garage. No open carports are allowed. No manufactured houses are allowed, site built homes only.

C-4. BUILDING LOCATION. No building shall be located on any lot, nearer to the side street line, than the minimum building set back lines as shown on the recorded plat. For the purposes of this covenant, eaves and steps shall not be considered as part of the building. No lot shall be subdivided and no more than one dwelling shall be permitted on any one lot.

C-5 BUILDING REQUIRMENTS. All buildings shall have roof pitch of no less than 6/12. A 2 car enclosed garage, No chain link fences shall be allowed, and all fences shall be of a wood type approved by the Architectural control committee.

C-6. EASEMENTS. Easements for installation and maintenance of utilities and drainage facilities, and construction, repair and maintenance of adequate walls, roofs and eaves are reserved as shown on recorded plat.

C-7. NUISANCES. No noxious or offensive trade or activities shall be carried on, nor shall anything be done thereon which may be or become a nuisance to the neighborhood.

C-8. TEMPORARY STRUCTURES. No structure of a temporary character, basement, tent, shack, garage, barn or other out building shall be used on any tract at any time as a residence either temporarily or permanently; except that the developer may have a temporary construction and/or sales office.

C-9. OUT BUILDINGS. One outbuilding for storage shall be permitted, if approved by the Architectural Control Committee and shall conform to the same architectural design and construction of the dwelling. Above ground swimming pools are prohibited.

C-10. SIGNS. No sign of any kind shall be displayed to the public view on any lot, except, one professional sign of not more than one square foot; one sign of not more than five square feet advertising the property for sale or rent or any signs used by a builder to advertise the property during the construction and sales period.

C-11. OWNER RESPONSIBILITY. Any property owner shall insure that any contractor performing services for the property owner shall comply with the provisions of this Bill of Assurance.

C-12. CONTRACTOR RESPONSIBILITY. No contractor shall damage in any way the utilities or streets in any manor.

C-13. OIL AND MINING OPERATIONS. No oil drilling, oil development operations, oil refining, quarrying or mining operations of any kind shall be permitted upon or in any lot, nor shall oil wells, tanks, tunnels, mineral excavations or shafts be permitted upon or in any lot. No derrick or structures designated for use in boring for oil or natural gas shall be erected, maintained or permitted upon any lot.

C-14. LIVESTOCK AND POULTRY. No animals, livestock or poultry of any kind may be raised, bred or kept on any tract, except that dogs or cats may be kept, on any lot provided that they are not kept, bred or maintained for any commercial purpose and provided that facilities for maintenance of same are approved by the Architectural Control Committee and that the keeping of same does not constitute a nuisance.

C-15. GARBAGE AND REFUSE DISPOSAL. No lot or easement shall be used or maintained as a dumping ground for rubbish. Trash, garbage and other waste shall not be kept except in sanitary containers. There shall be no burning of trash, rubbish, leaves or yard waste.

C-16 SIGHT DISTANCE AT INTERSECTIONS. No fence, wall, hedge or shrub planting which obstructs sight lines at elevations between 2 and 6 feet above the roadways shall be placed or permitted to remain on any lot corner which the triangular area formed by the street property lines and the line connecting them at points 15 feet from the intersection of street right of way lines, or in the case of a rounded property corner, from the intersection of the street property line extended. The same sight line limitations shall apply on any lot within 10 feet from the intersection of the street property line with the edge of a driveway pavement. No tree shall be permitted to remain within such distances or such intersections unless the foliage line is maintained at sufficient height to prevent obstruction of such sight lines.

C-17. LOT, YARD AND HOME MAINTENANCE. All property owners, after acquisition of any lot, shall keep all grounds and yards mowed, trimmed and clean. All houses shall be painted and stained. No deviation from the original plans shall be permitted without approval of the Architectural Control Committee.

C-18. COMMENCEMENT OF CONSTRUCTION. A property owner must start construction of an approved dwelling within a period of one (1) year from date of purchase. The developer reserves the option to repurchase any lot for the amount of the original purchase price if construction is not commenced within such period of time. This option shall be exercised in writing within a period of thirty (30) days after the one (1) year period.

C-19 COMPLETION OF CONSTRUCTION. Any dwelling must be completed in its entirety within a period of one year from date such construction is commenced.

C-20. MOTOR VEHICLE PARKING. Abandoned or unused motor vehicles shall not be parked or permitted to remain on any lot or within the dedicated street. Boats, recreational vehicles and trailers cannot be parked at the front or side of any dwelling or in the dedicated street and must be parked in back of the dwelling. Owners or permanent residents are prohibited from parking in the street. There shall be no non-functioning vehicles kept on the lot or in view of the public. There shall be no repair work done outside of the garage.

C-21. MINIMUM FLOOR LEVEL ELEVATIONS. The Architectural Control Committee reserves the right to prescribe the minimum floor elevations for lots. All homes shall have a minimum floor elevation of one foot above the back of the curb unless waived in writing by the Architectural Control Committee.

C-22 SEWER SERVICE. All homes shall connect to the Private Sewer System and pay such fee charged for the monthly service. No Septic systems shall be allowed on individual lots.

PART D. ARCHITECTURAL CONTROL COMMITTEE:

D-1 MEMBERSHIP. The Architectural Control Committee shall be composed of Darren Baker, Michelle Baker, and Travis Baker. A majority of the committee may designate a representative to act for it. In the event of death or resignation of any member of the committee,

the remaining members shall have full authority to designate a successor. Neither the members of the committee nor its designated representative shall be entitled to any compensation for these services performed pursuant to this covenant.

D-2 PROCEDURE. The committee's approval or disapproval as required in these covenants shall be in writing and in the form hereto attached marked Exhibit "A" which, when executed, should be retained by the owner/builder as proof of the Committee's approval. In the event the committee or its designated representative fails to approve or disapprove within 30 days after plans and specification have been submitted to it or in the event no suit to enjoin the construction or compliance with these covenants has been commenced within 180 days after the completion thereof will not be required and the related covenants shall be deemed to have been fully complied with. The Committee will with Buyer's will with Buyer's permission and at the expense of the Buyer refer Buyer's plan to an architect for revisions and changes to comply with the Bill of Assurance.

PART E. PROPERTY OWNERS ASSOCIATION

E-1 OWNERS EASEMENTS OF ENJOYMENT. Every owner shall have a right and easement of enjoyment in and to the common area which shall be appurtenant to and shall pass with the title to every tract. Subject to the following provision:

(a) The right of the Association to charge reasonable fees for maintenance of the common area;

E-2. MEMBERSHIP AND VOTING RIGHTS

SECTION 1: Every owner of a tract which is subject of assessment shall be a member of the Association. Membership shall be appurtenant to and may not be separated from ownership of any tract which is subject to assessment.

SECTION 2: The Association shall have two classes of voting membership:

Class A: Class A members shall be all owners, with the exception of the Declarant, and shall be entitled to one vote for each tract owned, which may be voted at such time as all tracts are sold by the Declarant. When more than one person holds an interest in any tract, all such persons shall be members. The vote for such tract shall be exercised as they determine, but in no event shall more than one vote be cast with respect to any Tract.

Class B: The Class B member(s) shall be the Declarant and shall be entitled to ten votes per tract owned. The Class B membership shall cease on the happening of the following events.

(a) when all tracts are sold by declarant.

E-3. COVENANT FOR MAINTENANCE ASSESSMENTS

SECTION 1: Creation of the Lien and Personal Obligation of Assessments: The Declarant, for each tract owned within the properties, hereby covenants, and each owner of any tract by acceptance of a deed therefore, whether or not it shall be so expressed in such deed, is deemed to covenant and agree to pay to the Association annual assessment or charges, such assessments to be established and collected as hereinafter provided. The annual assessments, together with interest, costs and reasonable attorneys' fees, shall be a charge on the land and shall be a continuing lien upon the property against which each such assessment is made. Each such assessment, together with interest, costs, and reasonable attorneys' fees, shall also be the personal obligation of the person who is the owner of such property at the time when the assessment fell due. The personal obligation for delinquent assessments shall not pass to his successors in title unless expressly assumed by them.

SECTION 2.: Purpose of Assessment: The assessments levied by the Association shall be used as follows:

- (a) For the maintenance and upkeep of all common areas
- (b) For any other purposes deemed in the best interest of the property owners by the Association

SECTION 3: Annual Assessment: Commencing on the date of filing of this Bill of Assurance, the property owners association will assume total responsibility for operation and maintenance of amenities and common areas and assess each property owner and annual assessment of \$60.00, which shall commence as to all Lots on the first day of January following the date of recordation of this instrument and then effective per annually thereafter. The fees may be adjusted after January 1 of the year immediately following the conveyance of the Lot to an Owner. The sole intent and purpose of these fees are for operation, maintenance, and improvements of the green space, street lights and other amenities in a manner determined by the association membership.

SECTION 4: Notice and Quorum for Any Action Authorized Under Section 3: Written Notice of any meeting called for the purpose of taking any action authorized under Section 3 shall be sent to all members not less than 10 days in advance of the meeting. At the first such meeting called, the presence of member or proxies entitled to cast 60% of all votes shall constitute a quorum.. If the required quorum is not present, another meeting may be called subject to the same notice requirement, and the required quorum at the preceding meeting shall be one-half (1/2) of the required quorum at the preceding meeting. No such subsequent meeting shall be held more than 60 days following the preceding meeting. Each tract as conveyed by Declarant shall have one vote.

SECTION 5: Uniform Rate of Assessment: Both annual and special assessments must be fixed at a uniform rate and may be collect on a semi-annual or annual basis.

SECTION 6: Date of Commencement of Annual Assessments: Due Dates: The annual assessments provided for herein shall commence as to all Lots on the first day of January following the date of recordation of this instrument. The Board of Directors shall fix the amount of the annual assessment against each Lot at least thirty (30) day in advance of each annual assessment period. Written notice of the annual assessment shall be sent to every Owner subject thereto. The due date shall be established by the Board of Directors. The Association shall, upon demand, and for a reasonable charge, furnish a certificate signed by an officer of the Association setting forth whether the assessments on a specified Lot have been paid. A properly executed certificate of the Association as to the status of assessments on a Lot is binding upon the Association as of the date of its issuance.

SECTION 7: Effect of Nonpayment of Assessments: Remedies of the Association: Any assessment not paid within thirty (30) days after the due date shall bear interest from the due date at the rate of ten percent per annum. The Association may bring an action at law against the owner personally obligated to pay the same, or foreclose the lien against the property. No owner may waive or otherwise escape liability for the assessments provided for herein by non-use of the common area or abandonment of the property.

SECTION 8: Subordination of the Lien to Mortgages: The lien of the assessments provided for herein shall be subordinate to the lien of any first mortgage. Sale or transfer of any tract shall not affect the assessment lien. However, the sale or transfer of any tract pursuant to mortgage foreclosure or any proceeding in lieu thereof, shall extinguish the lien of such assessments as to payments which became due prior to such sale or transfer. No sale or transfer shall relieve such tract from liability for any assessments thereafter becoming due or from the lien thereon.

SECTION 9: Special Assessments for Capital Improvements: In addition to the annual assessments authorized above, the members may levy, in any assessment year, a special assessment applicable to that year only for the purpose of defraying, in whole or in part, the cost of any construction, reconstruction, repair or replacement of a capital improvement upon the common areas, provided that such assessment shall have the assent of two-thirds (2/3) of the votes of the members who are voting in person or by proxy at a meeting duly called for this purpose.

PART F. GENERAL PROVISIONS:

F-1. TERM. These covenants are to run with the land and shall be binding on all parties and all persons claiming under them for a period of twenty-five years from the date these covenants are recorded after which time, said covenants shall be automatically extended for successive period of ten years, subject to the express provision that these covenants may be amended at any time after the date of execution hereby by an instrument signed by the members of the Architectural Control Committee and the owner or owners of a majority of the lots herein platted.

City of Bryant Subdivision Checklist

Subdivision/Project Name Kensington Place Phase 1
Contact Person Vernon Williams Phone 501-408-4650
Mailing Address 2909 Military Road

I. BASIC INFORMATION NEEDED ON THE PLAT

- ▲ 1. Name of Subdivision/Project
- ▲ 2. Current zoning R-1-S
- ▲ 3. Name and Address of owner of Record
- ▲ 4. Illustrate Source of Title giving deed record book and page number
- ▲ 5. Name & address of the sub-divider
- ▲ 6. Date of Survey
- ▲ 7. Vicinity map locating streets, highways, section lines, railroad, schools, & parks within ½ mile
- ▲ 8. Legal description of the property with exact boundary lines
- ▲ 9. Acreage of property
- ▲ 10. Number of Lots
- ▲ 11. Lot area in square feet
- ▲ 12. Lot lines with appropriate dimensions
- ▲ 13. Building setback lines
- ▲ 14. Preliminary Engineering certificate seal and signature on each page
- ▲ 15. Certificate of Engineering Accuracy
- ▲ 16. Certificate of Owner
- ▲ 17. Certificate of Final Plat Approval
- ▲ 18. Certificate of Recording
- ▲ 19. Show scale (not less than 1" = 100')
- ▲ 20. North Arrow
- ▲ 21. Show Title block
- ▲ 22. Show adjoining property owners
- ▲ 23. Layout of all proposed streets including traffic control devices (stop signs, speed limit, etc.)
- ▲ 24. Layout of all subdivision entrance street upgrades
- ▲ 25. Layout of all proposed alleys
- ▲ 26. Layout of all proposed sidewalk systems
- ▲ 27. Layout identifies any FEMA flood plain and flood way property within the 100-year flood elevation. (Provide Corp of Engineers 404 Permit if required)
- ▲ 28. Drainage easements for stormwater run-off and detention giving dimensions, locations, and purpose
- ▲ 29. Layout accommodates Master Street Plan segments within the boundaries
- ▲ 30. Street layout ties to existing adjoining subdivision stub-out streets and provides stub-out streets for future adjoining subdivisions.
- ▲ 31. Street width and right-of-way properly shown for each functional classification
- ▲ 32. Street centerlines showing angles of deflection, intersection, radii, length oftangents and arcs, and degree of curvature with basis of curve data
- ▲ 33. Typical cross section of streets
- ▲ 34. Location and name of existing streets
- ▲ 35. New street names that are not similar to existing street names
- ▲ 36. Show street lights
- ▲ 37. Show Fire Hydrant placement

- ▲ 38. Show and label all permanent & proposed easements
- ▲ 39. Any proposed open space must be shown
- ▲ 40. Show the direction and flow of all water courses entering the tract
- ▲ 41. Show the direction and flow of all water courses leaving the tract
- ▲ 42. The drainage area of all water courses above the points of entry.
- ▲ 43. The downstream drainage channel and drainage structures substantially impacted by the subdivision/project.
- ▲ 44. Show source of water supply
- ▲ 45. Show location of waste water connection to municipal main & sanitary sewer layout
- ▲ 46. A phasing plan outlining the boundaries for each phase

II. ADDITIONAL INFORMATION NEEDED, BUT NOT NECESSARILY ON THE PLAT

- ▲ 47. Natural features within the proposed subdivision including drainage channels, bodies of water, wooded areas, and other significant features
- ▲ 48. Existing streets, buildings, water courses, railroads. Culverts, utilities and easement on and adjacent to the tract.
- ▲ 49. Where method of disposal of wastewater is other than connection to a public waste water system, detailed information shall accompany the plat.
- ▲ 50. Calculations and field notes, including drainage calculations along with support drawing
 - 51. Stormwater detention plan approval from City Engineer (attach copy of approval)
- ▲ 52. The Certificate of Preliminary Engineering Accuracy on each set of street and drainage plans.
- ▲ 53. ADA Accessibility Standard Form completed (and attached)
- ▲ 54. A Bill of Assurance has been prepared for this subdivision (and attached)
- ▲ 55. All lots comply with minimum square footage area and minimum lot width at the front building line
- ▲ 56. Street pavement design will be as specified by City or AHTD design procedures, approved by the City Engineer.
- ▲ 57. Made the "One Call" prior to site clearance or other excavation activity

III. PRELIMINARY PLAT ATTACHMENTS

(APPLICATION WILL NOT BE ACCEPTED UNTIL ALL ATTACHMENT REQUIREMENTS ARE MET)

- ▲ 58. Letter to Planning Commission stating your request
- ▲ 59. Completed Checklist
- ▲ 60. Completed agreement to provide performance assurance
- ▲ 61. Subdivider Performance Bond or Cashier's Check for infrastructure installation
- ▲ 62. Landscaping plan of any proposed common open space
- ▲ 63. Draft of Bill of Assurance proposed for the subdivision (if applicable)
- ▲ 64. 20 copies of Preliminary Plat Plan (folded) that includes vicinity map (minimum size 17" X 34" paper)
- ▲ 65. Two (2) IBM compatible diskettes or CDR's with pertinent data and Plat in CAD compatible .DXF electronic file format
- ▲ 66. Copy of Stormwater Detention approval
- ▲ 67. 2 copies Plan and profile of all streets
- ▲ 68. Receipt for \$300.00 + \$3.00 per lot for preliminary Subdivision fee
- ▲ 69. Receipt for \$250.00 or \$25.00 per lot (whichever is greater) for Stormwater Detention and Drainage Plan review
- ▲ 70. Copy of ADEQ Stormwater Pollution Prevention Plan for property parcel containing one acre or larger.

III. FINAL PLAT ATTACHMENTS

(APPLICATION WILL NOT BE ACCEPTED UNTIL ALL ATTACHMENT REQUIREMENTS ARE MET)

- ▲ 71. Letter to Planning Commission stating your request
- ▲ 72. Completed Checklist
- ▲ 73. 20 copies of Final Plat Plan (folded) that includes vicinity map (minimum size 17" X 34" paper)
- ▲ 74. Two (2) IBM compatible diskettes or CDR's with pertinent data and Plat in CAD compatible .DXF electronic file format
- ▲ 75. Bill of Assurance including provisions set out in Title 15 Subdivision Regulations 15.16.01
- ▲ 76. Copy of Water & Sewer Commission approval or....
- ▲ 77. State Health Department approval of any new water supply and/or sewage system.
- ▲ 78. Letter submitted by a Registered Professional Engineer, certifying that all infrastructure improvements and installations have been installed in accordance with the submitted construction plans and drawings and the standards established by the City of Bryant and are functioning properly.
- ▲ 79. Infrastructure Maintenance Bond or Cashier's check.
- ▲ 80. Check for \$25.00 + \$1.00 per lot for final Subdivision fee
- ▲ 81. Check for Water Sewer impact fees (\$100.00 Flushing Fee and \$100.00 impact fee per lot)

Kensington Place Phase 2
Name of Subdivision

Kelly Vandenberg
Surveyor

I HAVE COMPLIED WITH THE REQUIREMENTS LISTED ABOVE AND HAVE CHECKED ALL OF THE BOXES ON THE CHECKLIST WHICH APPLY TO THIS PROJECT SUBMITTAL.

[Signature]
Owner Signature

Kelly Vandenberg
Engineer Signature

CITY USE

Preliminary Plat Approved _____

Planning Commission Date _____

Final Plat Approved _____

Planning Commission Date _____

Proof of Recording - County _____

County Clerk _____

Date _____

Sewer Improvements
 Kensington Place Subdivision - Phase 1
 Bryant, Arkansas
 16-Aug-17

Item#	Item Description	Total	Unit	Unit Price	Cost
1	Manhole	15	each	\$ 1,500.00	\$ 22,500.00
2	8" gravity sewer	3276	LF	\$ 25.00	\$ 81,900.00
3	lift Station	1	each	\$ 60,000.00	\$ 60,000.00
4	4" Force Main	3634	LF	\$ 10.00	\$ 36,340.00
5	Air Release Valve	3	each	\$ 2,000.00	\$ 6,000.00
6	4" MJ plug Valve	3	each	\$ 750.00	\$ 2,250.00
Total					\$ 208,990.00



Arkansas Department of Health

4815 West Markham Street • Little Rock, Arkansas 72205-3867 • Telephone (501) 661-2000

Governor Asa Hutchinson

Nathaniel Smith, MD, MPH, Director and State Health Officer

Engineering Section, Slot 37
www.healthy.arkansas.gov

Ph 501-661-2623

Fax 501-661-2032

After Hours Emergency 501-661-2136

September 23, 2016

Vernon J. Williams PE
GarNat Engineering, LLC
PO Box 116
Benton, Arkansas 72018

RE: Kensington Place Phase 1 (36 Lots) – Water and Sewer Extension
Salem, Saline County
ADH Project No. 97159

Dear Mr. Williams:

The plans for the above-captioned project dated 9-19-16, and submitted to the Engineering Section on 9-20-16, have been reviewed and are here by approved with the following conditions:

1. The Engineering Section relied upon the statements and representations made in the engineer's report, plans and specifications. In case any statement or representation in the aforementioned documents is found to be incorrect, this Approval may be revoked.
2. There shall be no deviation from the plans and specifications unless revised plans and specifications have been first submitted for review and written consent given.
3. The review and approval of the plans and specifications were for functional and sanitary features and in no way constitute an analysis of the structural design.
4. If construction on this project is not started within one year of the date affixed hereto, this Letter of Approval is void.
5. Construction shall be performed according to the Salem Water and Bryant Wastewater standard specifications and details.
6. Construction inspection for this project shall be the responsibility of Vernon J. Williams PE (GarNat Engineering).
7. All materials and components installed after January 3, 2014 in drinking water systems are required to comply with the federal definition of "lead free" contained in Public Law 111-380.

One set of the plans is being retained for our files and a set is being returned to you. When submitting correspondence pertaining to this project, please include our reference number 97159.

Sincerely,

Robert D. Arthur, P.E.
Engineer Supervisor
Engineering Section

RDA: SGB: sgb

cc: Salem Water Association (PWS 492)
Bryant Wastewater (PSS S78)
Saline County Sanitarian
Protective Health Codes



October 30, 2017

Mr. Truett Smith
Planning Director
210 SW 3rd Street
Bryant, AR 72022

Dear Mr. Smith:

Please find attached, the Planning Commission Application package for our Hurricane Storage Center self-storage project located at 4302 Springhill Road, Bryant. We would like to be on the November 13, 2017 PC agenda.

Included in the package are the following items:

- Completed checklist
- Executed ADA form
- 10 sets of plans reflecting comments from the DRC and with required specifications
- Stormwater detention plans
- \$250 fee for Stormwater plan review

Please let me know what else you may require for this submission to be on the requested agenda.

Sincerely,

A handwritten signature in black ink, appearing to read "Bud Finley", is written over the word "Sincerely,".

Bud Finley

Bryant Planning Commission

LARGE SCALE DEVELOPMENT COMMERCIAL BUILDING CHECKLIST

CITY OF BRYANT
210 SW 3RD STREET
BRYANT, AR 72022
501-943-0309

PC MEETING DATE: SECOND MONDAY OF EACH MONTH
TIME: 6:00 P.M.
PLACE: COURTROOM - BRYANT OFFICE COMPLEX
AGENDA DEADLINE: 5:00 P.M. THREE WEEKS PRIOR TO THE REGULARLY SCHEDULED MEETING DATE ✓

REQUIREMENTS FOR SUBMISSION

LETTER TO PLANNING COMMISSION STATING YOUR REQUEST

COMPLETED CHECKLIST (SUBDIVISION OR BUILDING)

ADA/ABA FORM COMPLETED

TWO FULL SETS OF BUILDING PLANS

20 FOLDED COPIES OF SITE PLAN (MINIMUM SIZE 17" X 34") THAT INCLUDES THE FOLLOWING:

VICINITY MAP - LEGAL DESCRIPTION - LANDSCAPING PLAN

20 FOLDED COPIES OF FLOOR PLAN

20 COPIES OF FRONT AND REAR BUILDING ELEVATIONS

AN IBM COMPATIBLE DISKETTE IN PDF FORMAT

COPY OF ADEQ STORMWATER POLLUTION PREVENTION PLAN FOR PROPERTY PARCEL CONTAINING ONE ACRE OR LARGER.

COPY OF STORMWATER DETENTION APPROVAL BY ENGINEER

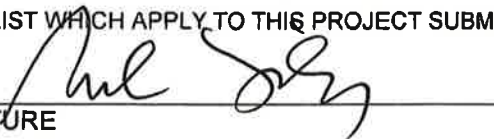
\$250.00 FOR STORMWATER DETENTION AND DRAINAGE PLAN REVIEW

ALL REQUIREMENTS LISTED ABOVE MUST BE COMPLETED AND ATTACHED BEFORE SUBMITTING APPLICATION TO BE PLACED ON THE PLANNING COMMISSION AGENDA.

NOTE: WHEN MAKING CHANGES TO AN APPROVED SITE PLAN, A REVISED SITE PLAN MUST BE SUBMITTED TO THE BRYANT PLANNING COMMISSION FOR APPROVAL. THIS MUST BE DONE PRIOR TO IMPLEMENTATION. FAILURE TO COMPLY WILL RESULT IN PENALTIES/FINES BEING IMPOSED IN ACCORDANCE WITH CITY ORDINANCES.

I HAVE COMPLIED WITH THE REQUIREMENTS LISTED ABOVE AND HAVE CHECKED ALL OF THE BOXES ON THE CHECKLIST WHICH APPLY TO THIS PROJECT SUBMITTAL.

SIGNATURE



DATE

11-2-17

City of Bryant Commercial Building Checklist

Name of Development Hurricane Storage Center (Ph. 1)
Site Location 4302 Springhill Rd Current zoning C-2
Owner Arkansas Storage Centers V LLC Phone 501-666-1300

I. BASIC INFORMATION NEEDED ON THE SITE PLAN

- ▲ 1. Name of Development
- ▲ 2. Current zoning
- ▲ 3. Name and Address of owner of Record
- ▲ 4. Name and address of the architect, landscape architect, engineer, surveyor, or other person involved in the preparation of the plan
- ▲ 5. Date of preparation of the plan
- ▲ 6. Vicinity map locating streets, highways, section lines, railroad, schools, & parks within ½ mile
- ▲ 7. Legal description of the property with exact boundary lines
- ▲ 8. North arrow & Scale
- ▲ 9. Identification of any land areas within the 100 year floodplain and within the 100 year floodway
- ▲ 10. Lot area in square feet
- ▲ 11. Show scale (not less than 1" = 100') (paper size minimum 17" X 34")
- ▲ 12. Existing streams, drainage channels, and other bodies of water
- ▲ 13. Drainage easements for stormwater run-off and detention shown & labeled *MAJ*
- ▲ 14. Location and name of existing streets
- ▲ 15. Show source of water supply
- ▲ 16. Show location of waste water connection to municipal system & sanitary sewer layout
- ▲ 17. Fire Hydrant placement *MAJ*
- ▲ 18. Proposed location of buildings and other structures, parking areas, drives, loading areas, service areas, alleys, walks, screening, and public streets
- ▲ 19. Sufficient dimensions to indicate relationship between buildings, property lines, parking areas and other elements of the plan
- ▲ 20. Extent and character of proposed landscaping. Common and/or Botanical plant names and sizes of new vegetation must be clearly indicated.
- ▲ 21. Location, massing and pattern of existing vegetation to be retained
- ▲ 22. Existing structures on the site
- ▲ 23. Pedestrian and vehicular access points, sidewalks, crosswalks, etc. *MAJ*
- ▲ 24. Typical building elevations depicting the style, size and exterior construction materials of the buildings proposed. Where several building types are proposed on the plan, such as apartments and commercial buildings, a separate sketch shall be prepared for each type. The elevations shall be drawn at a minimum scale of 1/16" to a foot and must show adjoining context.
- ▲ 25. Any variance approvals

Approved by - MAJ

II ADDITIONAL INFORMATION NEEDED, BUT NOT ON THE SITE PLAN

COMMERCIAL BUILDING WORKSHEET

	Yes	No
Site is compatible with Master Street Plan	X	
Proposed improvement is within building line setbacks Front <u>50</u> ft. Side <u>25</u> ft. CNR Side <u> </u> ft. Back <u>55</u> ft.		
Parking requirements can be satisfied Floor Space <u> </u> sq.ft. divided by 300 = <u> </u> (no. of parking spaces required)		
Improvement is outside 100 year flood plain (if answer is no - Provide 404 Permit for site)	✓	
Lowest building floor level and all mechanical equipment are above FEMA 100 year flood elevation		
Will there be a dumpster located on the site? <u>Construction</u>	✓	
Will there be a construction site office?		✓
Have you made "One Call"?	✓	
Structure and site complies with ADA (Americans with Disability Act) and ABA (Architectural Barriers Act) Accessibility Guidelines	✓	
Design complies with Arkansas Plumbing Code and National Electric Code requirements	✓	
Foundation and structure meet earthquake requirements for Zone 1.	✓	
Structure meets Arkansas Energy Code for specified use.	✓	
Complies with Arkansas Fire Prevention Code	✓	
Complies with International Code Council regulations	✓	
Will a Site Clearance Permit be required? (City Ordinance 2002-03)	✓	
Are you granted any variances by the Board of Adjustment?		✓
If you have been granted a variance please explain in detail:		

III. LANDSCAPING COMPLIANCE WITH REQUIREMENTS

	YES	NO
No planting within 5 feet of a fire hydrant	✓	
Spacing will be 40' between trees	✓	
Tree must be a minimum 3" in diameter at the base and 12' + tall	✓	
Existing trees meeting the minimum size can be counted to meet above criteria	✓	
No trees can be planted within 30 feet of a property corner or driveway	✓	
Shrubs along street right-of-way lines cannot exceed 30 inches in height	✓	

IV. SITE COVERAGE COMPLIANCE WITH REQUIREMENTS

(FOR YOUR CONVENIENCE WE HAVE LISTED THE THREE COMMERCIAL ZONING SITE COVERAGE REQUIREMENTS - CHOOSE THE ZONING FOR THIS PROJECT AND COMPLETE ONLY THAT SECTION)

	<u>YES</u>	<u>NO</u>
1. C-1 Zoning - Neighborhood Commercial		
Lot area: minimum of 2,500 square feet; maximum 16,000 square feet	_____	_____
Front Yard: none required	_____	_____
Side Yard: minimum of 5 feet each side	_____	_____
Rear Yard: minimum of 55 feet	_____	_____
Maximum lot coverage of 70% of the total area of the site for all principal, accessory buildings, parking lots, sidewalks, private streets, or drives.	_____	_____
Parking: one space per each 200 sq. ft. of commercial use	_____	_____
Loading areas: physically separated from all streets with 10 ft grassy area	_____	_____
When abuts a residential district, a minimum 6' high wood, rock, or masonry fence is required with a landscape screen	_____	_____
 2. C-2 Zoning - Lots fronting along roadways designated as Interstate 30 and frontage roads, State Highway 5 and 183		
Front Yard: not less than 50 feet from front property line	✓	_____
Side Yard: not required, except where they abut a street or a residential lot line then a minimum of 25 feet is required	✓	_____
Rear Yard: minimum of 15 feet, except where they abut residential area then a minimum of 55 feet is required	✓	_____
A maximum lot coverage of 35% of the total area of the site for all principal and accessory buildings	✓	_____
Parking: one space per each 300 sq. ft. of occupied space	✓	_____
When abuts a residential district, a minimum 6' high wood, rock, or masonry fence is required with a landscape screen	✓	_____
 3. C-2 Zoning - Lots fronting along roadways designated as interior local.		
Front Yard: none required	_____	_____
Side Yard: not required, except where they abut a street or a residential lot line then a minimum of 25 percent of lot dimension	_____	_____
Rear Yard: minimum of 15 feet, except where they abut residential area then a minimum of 55 feet is required	_____	_____
A maximum lot coverage of 85% of the total area of the site for all principal, accessory buildings and parking	_____	_____
Parking: one space per each 300 sq. ft. of occupied space	_____	_____
When abuts a residential district, a minimum 6' high wood, rock, or masonry fence is required with a landscape screen	_____	_____

V. SITE PLAN ATTACHMENTS

(APPLICATION WILL NOT BE ACCEPTED UNTIL ALL ATTACHMENT REQUIREMENTS ARE MET)

- ▲ 26. Letter to Planning Commission stating your request
- ▲ 27. Completed Checklist
- ▲ 28. Completed ADA/ABA Form
- ▲ 29. Two full sets of Building Plans
- ▲ 30. 20 copies of Site Plan (folded to no larger than 8 ½ X 14 size) that includes vicinity map and landscaping plan (minimum size 17" X 34" paper)
- ▲ 31. 20 copies of Landscaping Plan (folded to no larger than 8 ½ X 14 size)
- ▲ 32. 20 copies of building floor plan (folded to no larger than 8 ½ X 14 size)
- ▲ 33. Copy of Stormwater Detention approval
- ▲ 34. Copy of ADEQ Stormwater Pollution Prevention Plan for property containing one acre or larger.
- ▲ 35. IBM compatible diskette or CD with data in PDF format.
- ▲ 36. Receipt for \$250.00 for Stormwater Detention and Drainage Plan review

10

I CERTIFY that the design of Hurricane Storage Center in the City of Bryant, Arkansas complies with the above regulations, laws and codes.

Bud Finley / Stuart Finley
Owner

P.O. Box 10

Mailing Address

Bryant, AR 72089
City

Thomas Engineering
Thomas Pownall

Engineer/Architect

501-753-4463

Phone #

11-2-17

Date

CITY USE

Action Taken:

Special Conditions:

Permit Issued: Date _____ Sq.Ft. _____ Amount \$ _____

Construction Completed Certified For Occupancy: Date: _____

Inspector: _____

Permit No. _____

BUILDING PERMIT

ADA/ABA ACCESSIBILITY STANDARDS

The *Americans with Disability Act* and *Architectural Barriers Act* Accessibility Guidelines were prepared by the U.S. Access Board and mandated by the U. S. Department of Justice regulations implementing Title III as the official ADA/ABA accessibility guidelines. All new construction, remodeling, and modifications must conform to these building standards for places of public accommodation and commercial facilities. Residential is exempt.

The ADA/ABA accessibility guidelines contain general design standards for building and site elements, such as accessible entrances and routes, ramps, parking spaces, stairs, elevators, restrooms, signage, etc. Also included are specific standards for restaurants, medical care facilities, libraries and transportation facilities and vehicles, and places of lodging.

The guidelines also include "scoping" requirements that outline the necessary features or appropriate quantity for achieving ready access. For example, at least 50 percent of all public entrances to buildings must be accessible with an accessible path of travel. In public restrooms, at least one bathroom stall must be accessible unless there are more than six stalls, in which case the number increases.

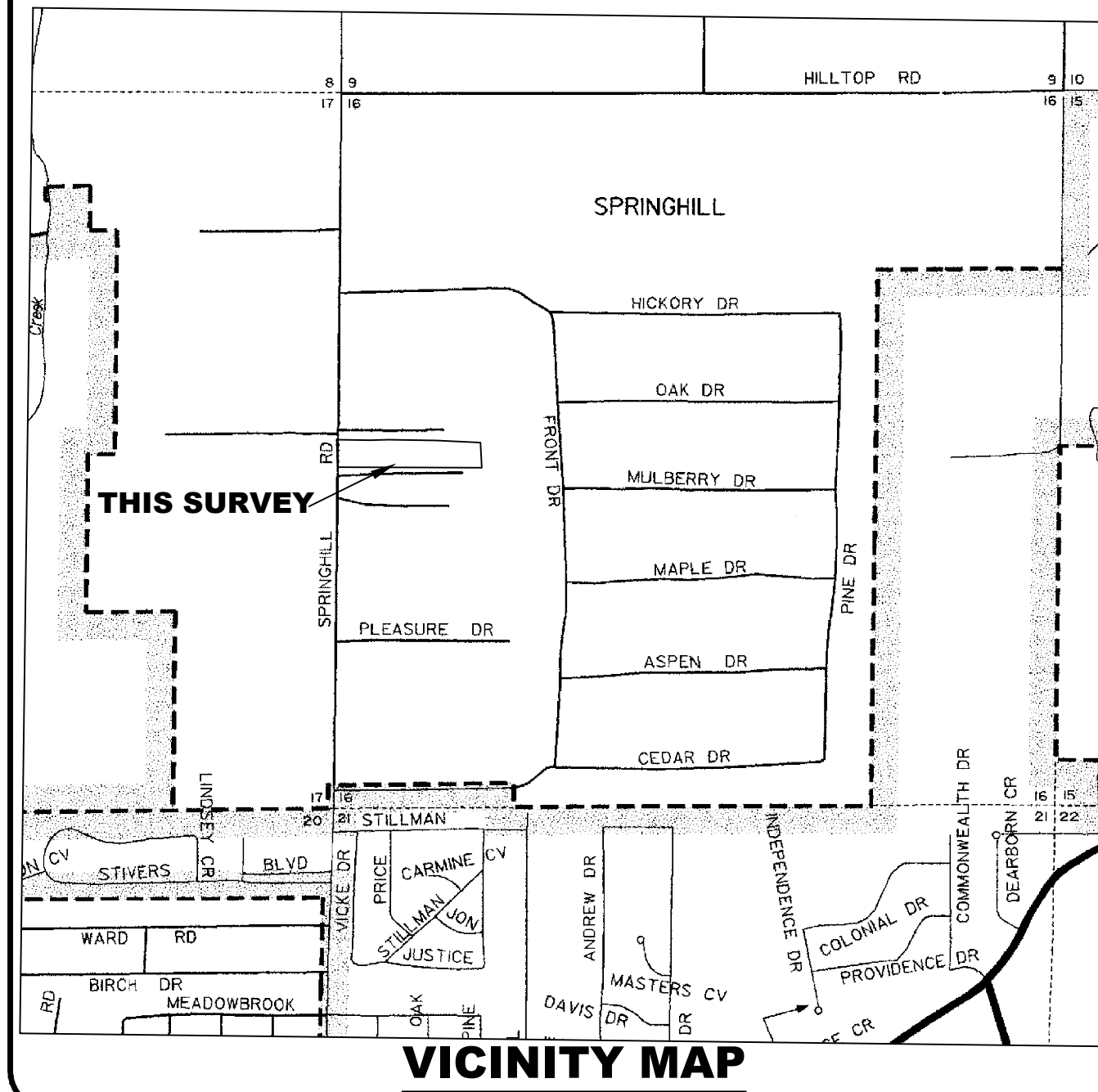
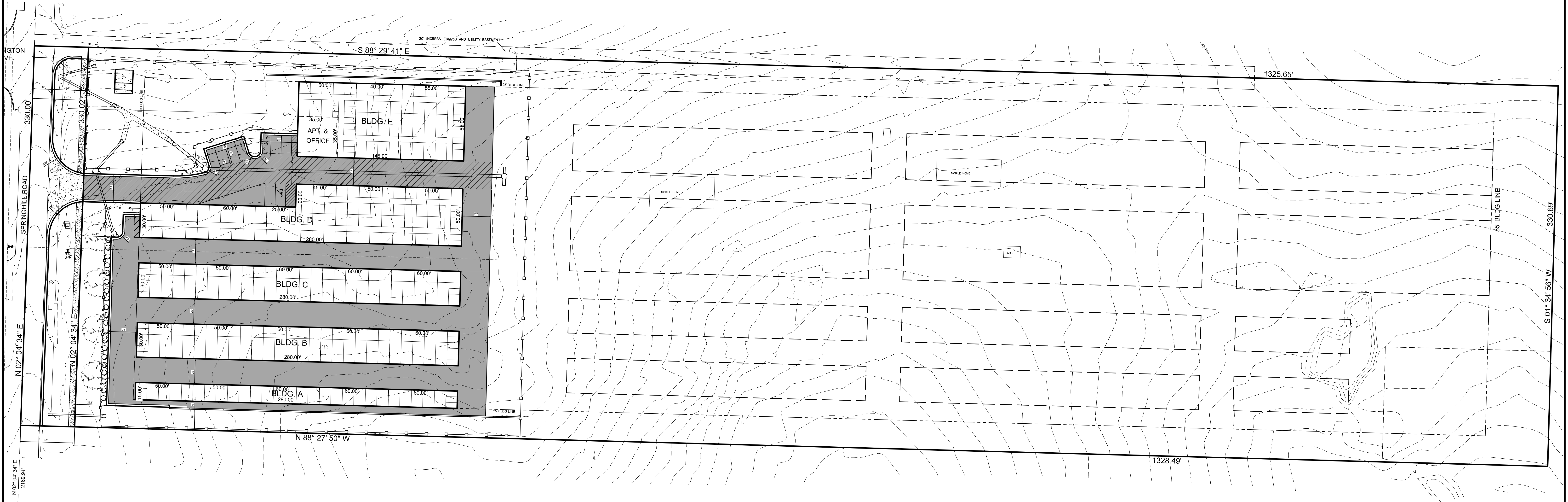
I hereby certify that I have read and examined the above notice and will comply with all guidelines of the ADA Accessibility Guidelines. I further understand that a copy of the ADA/ABA Regulations are available for inspection during business hours of City Hall or I may obtain a copy by writing:

The Access Board
1331 F Street, NW, Suite 1000
Washington, DC 20004-1111
(202) 272-0080 (v) (202) 272-0082 (TTY) (202) 272-0081 (fax)
(800) 872-2253 (v) (800) 993-2822 (TTY)
email: info@access-board.gov

Signature of Contractor
or Authorized Agent _____ Date _____

Signature of Owner
(if owner-builder) Paul J. Jolley Finley + Co., Inc. Date 11-2-17

Application of Permit Approved: _____ Date _____
Commission - Chairman



- SITE PLAN REVIEW NOTES**
1. SITE CONTAINS 5 BUILDINGS IN PHASE 1. TOTAL SQUARE FOOTAGE OF ALL UNITS IS 41,725 SF.
 2. BASIS OF BEARINGS: PAGIS
 3. THE PROPERTY IS NOT SHOWN IN THE 100 YEAR FLOOD PLAIN ON THE FLOOD INSURANCE RATE MAP COMMUNITY PANEL NUMBER 050308 0225 D DATED JUNE 19, 2012.
 4. THIS PROPERTY IS ZONED C-2 (HIGHWAY COMMERCIAL).
 5. ALL ABUTTING PROPERTY IS ZONED R-1.
 6. THIS TRACT CONTAINS 438,384 S.F. OR 10.06 ACRES, MORE OR LESS.
 7. SETBACKS SHOWN ARE FOR C-2 ZONING.
 50' FRONT
 25' SIDE (ABUTTING RESIDENTIAL)
 55' REAR (ABUTTING RESIDENTIAL)

LEGAL DESCRIPTION
 (AS PREPARED BY RASBERRY SURVEYING, 1/23/17)

THAT PART OF THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 16, TOWNSHIP 1 SOUTH RANGE 14 WEST, SALINE COUNTY, ARKANSAS, DESCRIBED AS FOLLOWS:

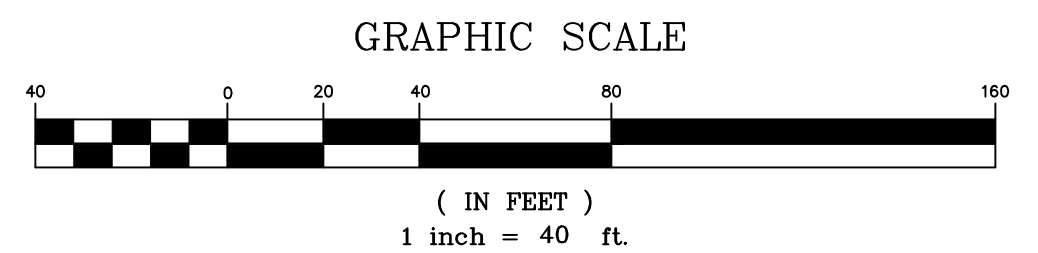
COMMENCING AT A #4 REBAR, BEING THE SOUTHWEST CORNER OF SECTION 16, TOWNSHIP 1 SOUTH, RANGE 15 WEST;

THENCE N 00° 46' 14" E ALONG THE WEST LINE THEREOF FOR 2499.94 FEET TO THE POINT OF BEGINNING;
 THENCE S 89° 48' 01" E FOR 1325.65 FEET TO A #3 REBAR, SAID POINT BEING ON THE EAST LINE OF THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER;
 THENCE S 00° 16' 36" W ALONG SAID EAST LINE FOR 330.69 FEET TO A 1" PIPE;
 THENCE N 89° 46' 10" W FOR 1328.49 FEET TO A POINT ON THE WEST LINE OF SECTION 16;
 THENCE N 00° 46' 14" E ALONG SAID WEST LINE FOR 330.00 FEET TO THE POINT OF BEGINNING; CONTAINING 10.06 ACRES, MORE OR LESS.

SUBJECT TO AND TOGETHER WITH AN EASEMENT FOR INGRESS, EGRESS AND UTILITY PURPOSES OVER AND ACROSS THE FOLLOWING DESCRIBED PROPERTY ALL THAT PART OF THE WEST HALF OF SECTION 16, TOWNSHIP 1 SOUTH, RANGE 14 WEST, SALINE COUNTY, ARKANSAS, DESCRIBED AS:

BEGINNING AT A POINT ON THE WEST LINE OF SAID SECTION 16 THAT IS 2500.6 FEET NORTH OF THE SOUTHWEST CORNER THEREOF;
 FROM SAID POINT, RUN THENCE SOUTH 10 FEET;
 THENCE EAST FOR 1056 FEET, MORE OR LESS, TO A POINT THAT IS 264 FEET WEST OF THE EAST LINE OF THE WEST HALF OF THE WEST HALF OF SECTION 16;
 THENCE NORTH 20 FEET TO A POINT THAT IS 264 FEET WEST OF THE EAST LINE OF THE WEST HALF OF THE WEST HALF OF SECTION 16;
 THENCE WEST 1056 FEET TO A POINT THAT IS DUE NORTH OF THE POINT OF BEGINNING; RUN THENCE SOUTH 10 FEET TO THE POINT OF BEGINNING.

SUBJECT TO THE RIGHT-OF-WAY OF SPRINGHILL ROAD.



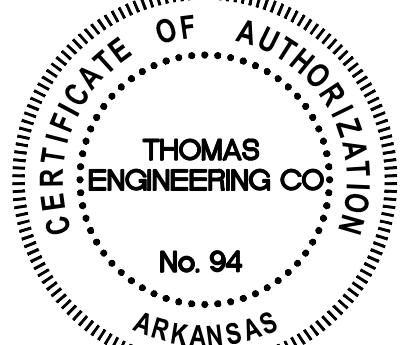
PARKING
 REGULAR 9 SPACES
 ASSESSIBLE 1 SPACE
 TOTAL 10 SPACES



ARKANSAS STATE LAW REQUIRES THAT THE EXCAVATOR IS TO LOCATE ALL EXISTING UTILITIES IN ACCORDANCE WITH THE ARKANSAS UNDERGROUND FACILITIES DAMAGE PREVENTION ACT. THIS LAW REQUIRES THAT THE EXCAVATOR MAKE A TELEPHONE CALL TO THE ARKANSAS ONE CALL SYSTEM AT 1-800-482-8998 AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION TO INSURE THAT ANY EXISTING UTILITIES CAN BE LOCATED.

OWNER AND DEVELOPER:
 STUART FINLEY
 FINLEY & COMPANY
 P.O. BOX 10
 BRYANT, AR. 72089

**PRELIMINARY
 NOT FOR CONSTRUCTION**



TE THOMAS ENGINEERING COMPANY
 3810 LOOKOUT ROAD, N. LITTLE ROCK, AR. 72116
 TEL: 501-753-4463 FAX: 501-753-6814

SITE PLAN REVIEW HURRICANE STORAGE PH. 1 BRYANT, ARKANSAS			
APPROVED	DRAWN BY	DATE	SHEET NO.
	JRP	11/3/17	C 1.0
SCALE			
1" = 40'			

HURRICANE STORAGE - BRYANT.dwg

PLOTTED: 11/3/2017

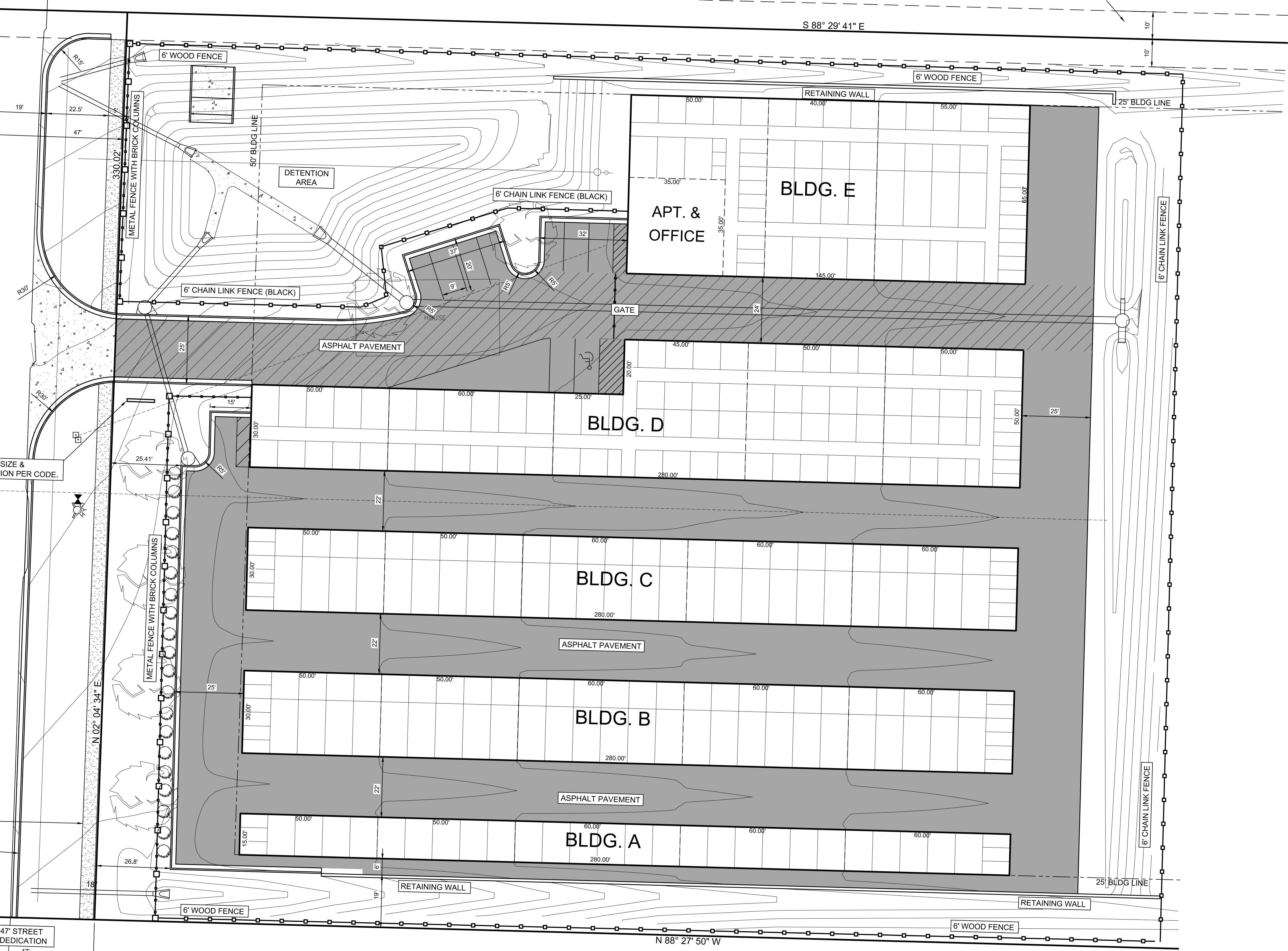
LEXINGTON AVE.

SPRINGHILL ROAD

CITY OF BENTON
CITY OF BRYANT

20' INGRESS-EGRESS AND UTILITY EASEMENT

S 88° 29' 41" E



LEGEND

- SHOWS HEAVY DUTY ASPHALT PAVEMENT
- SHOWS STANDARD DUTY ASPHALT PAVEMENT
- SHOWS PROPOSED SHRUB @ 3' CENTERS DWARF YAUPON (ILEX VOMITORIA "NANA")
- SHOWS PROPOSED TREE WILLOW OAK (QUERCUS PHELLOS)
6 TOTAL SHOWN FOR 3 ACRE DEVELOPMENT

SITE PLAN REVIEW NOTES

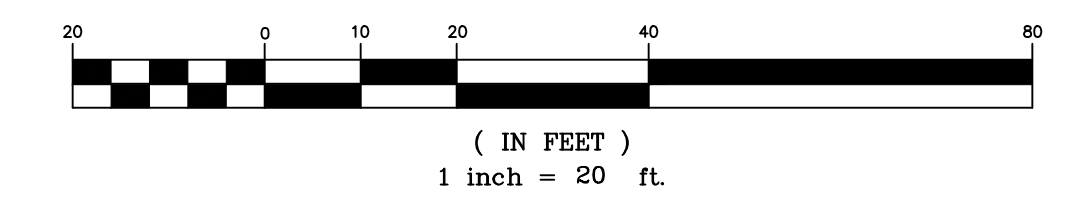
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50' FRONT
25' SIDE (ABUTTING RESIDENTIAL)
55' REAR (ABUTTING RESIDENTIAL)

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PARKING

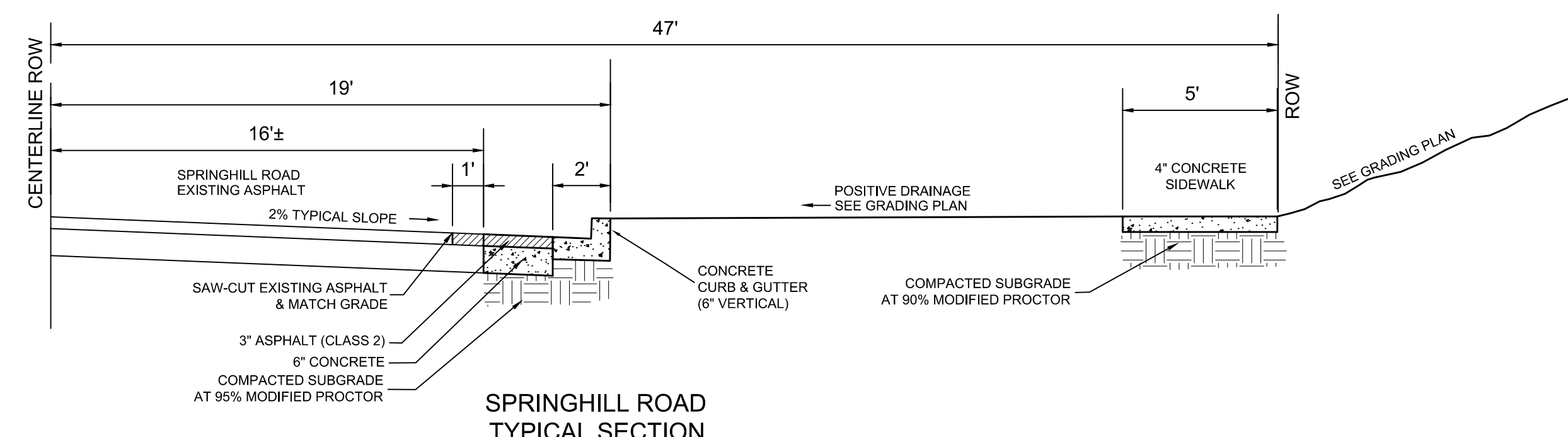
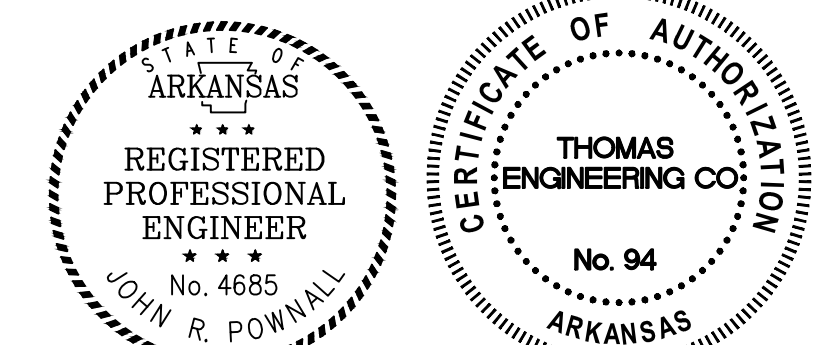
REGULAR	9 SPACES
ACCESSIBLE	1 SPACE
TOTAL	10 SPACES

GRAPHIC SCALE



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PRELIMINARY
NOT FOR CONSTRUCTION



- NOTES ON SECTION:
1. SUBGRADE SHALL BE COMPACTED TO 90% MODIFIED PROCTOR UNDER SIDEWALKS.
 2. CRUSHED STONE - MATERIAL IN EACH COURSE SHALL BE COMPACTED TO 98% MODIFIED PROCTOR.
 3. ANY UNDERCUT SHALL BE SPECIFIED AND APPROVED BY CITY AND OR INSPECTING ENGINEER.

THOMAS ENGINEERING COMPANY

3810 LOOKOUT ROAD, N. LITTLE ROCK, AR. 72116
TEL: 501-753-4463 FAX: 501-753-6814

**SITE PLAN
HURRICANE STORAGE PH. 1
BRYANT, ARKANSAS**

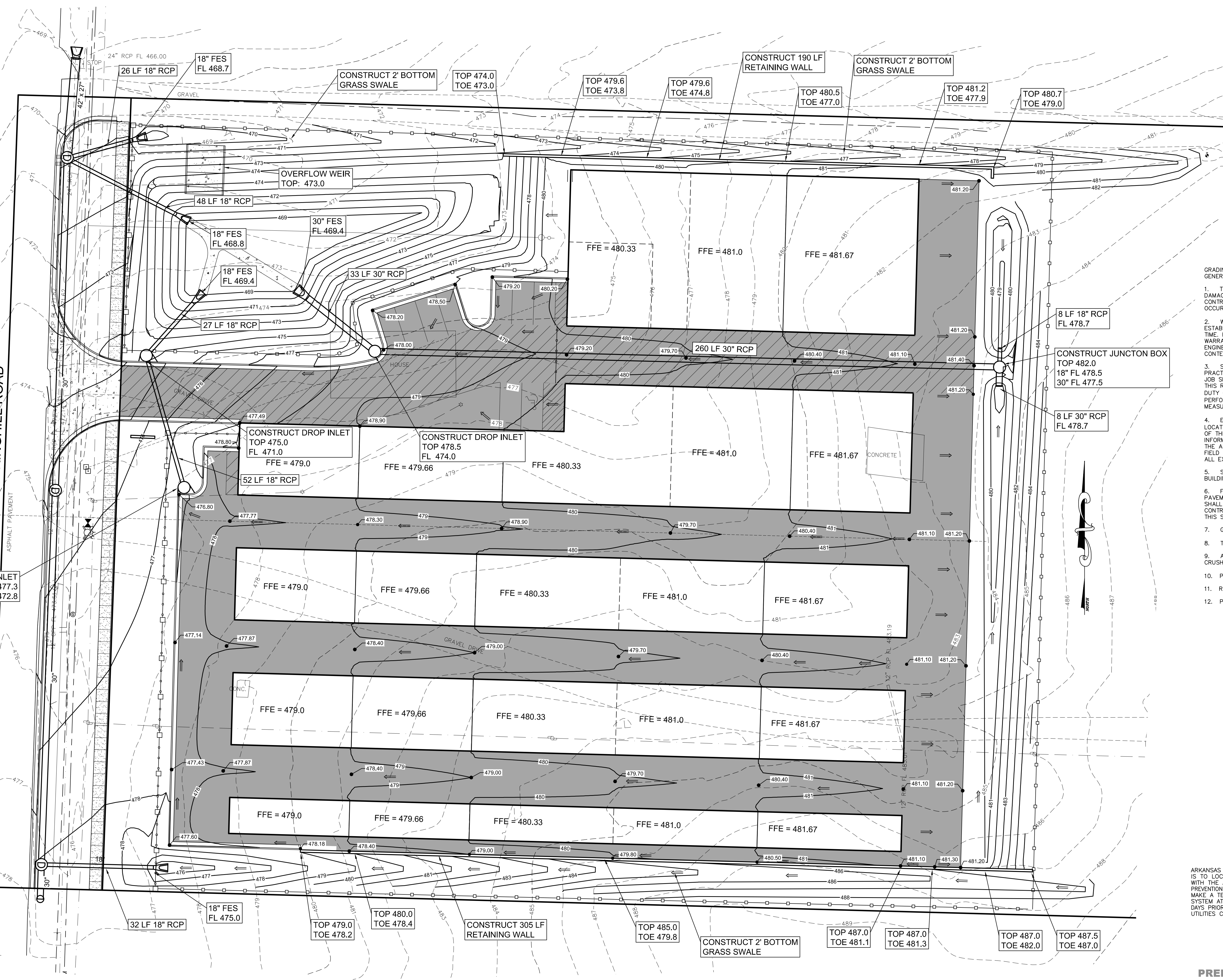
APPROVED	DRAWN BY	DATE	SHEET NO.
	JRP	11/3/17	C 1.1
SCALE	1" = 20'		

HURRICANE STORAGE - BRYANT.dwg

PLOTTED: 11/3/2017

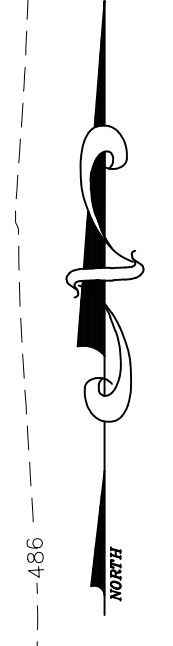
LEXINGTON AVE.

SPRINGHILL ROAD



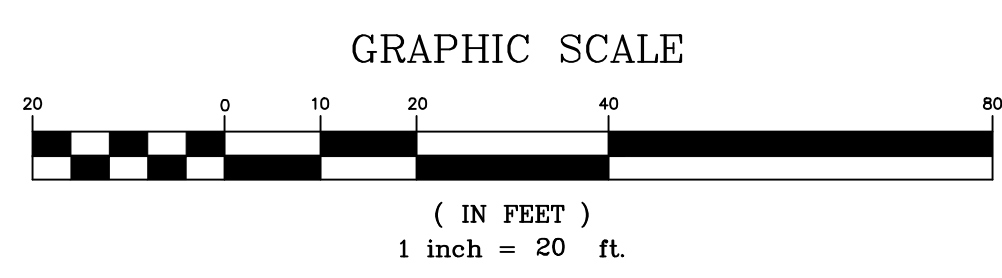
GRADING PLAN
GENERAL NOTES

1. THE GENERAL CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
2. WARRANTY/DISCLAIMER. THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED AT THIS TIME. HOWEVER, NEITHER THOMAS ENGINEERING COMPANY, INC., NOR ITS PERSONNEL CAN OR DO WARRANTY THESE DESIGNS OR PLANS AS CONSTRUCTED EXCEPT IN THE SPECIFIC CASES WHERE THOMAS ENGINEERING COMPANY PERSONNEL INSPECT AND CONTROL THE PHYSICAL CONSTRUCTION ON A CONTEMPORARY BASIS AT THE SITE.
3. SAFETY NOTICE TO CONTRACTOR. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE DUTY OF THE ENGINEER OR OWNER TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE.
4. ENGINEER'S NOTICE TO CONTRACTOR. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
5. SEE ARCHITECTURAL PLANS FOR DETAILS ON CONCRETE RAMPS AND SIDEWALKS ATTACHED TO BUILDINGS.
6. FINISHED GRADE CONTOURS ARE INDICATED ALONG TOP OF COMPLETED STRUCTURES, TOP OF PAVEMENT AND GUTTER LINE OF CURB, UNLESS OTHERWISE SHOWN. FOR ROUGH GRADING, CONTRACTOR SHALL ALLOW FOR DEPTHS OF TOPSOIL AND CONCRETE STRUCTURES. FOR FINISH GRADING, CONTRACTOR SHALL INSTALL TOPSOIL AND CONCRETE STRUCTURES TO FINISHED GRADE AS INDICATED ON THIS SHEET.
7. GRADE TO DRAIN AWAY FROM BUILDING AT MINIMUM 1% SLOPE.
8. THE GENERAL CONTRACTOR SHALL FURNISH "AS-BUILT" DRAWINGS AT END OF PROJECT.
9. ALL STORM DRAIN LINES AND UTILITY LINES UNDER THE PAVEMENT SHALL BE BACK FILLED WITH CRUSHED STONE.
10. PLACE A 6" MINIMUM DEPTH OF TOPSOIL OVER ALL LAWN AND LANDSCAPE AREAS.
11. REFER TO LANDSCAPE PLAN FOR PERMANENT TURF SOO AND SEEDING AREAS.
12. PROVIDE TEMPORARY SEEDING AND EROSION CONTROL PER STATE AND LOCAL CODES.

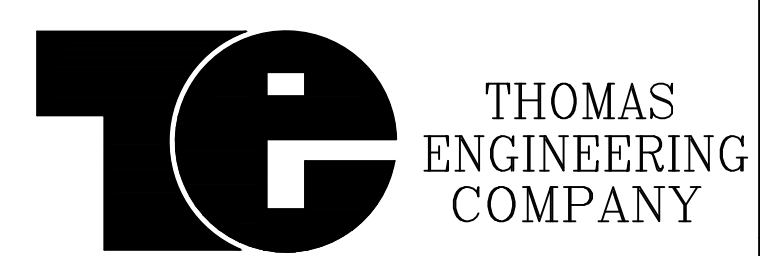


LEGEND

- 99.5 SHOWS SPOT ELEVATION AT GUTTER OF CURB
- NOTE: SPOT ELEVATIONS FINISHED GRADE UNLESS OTHERWISE SHOWN.



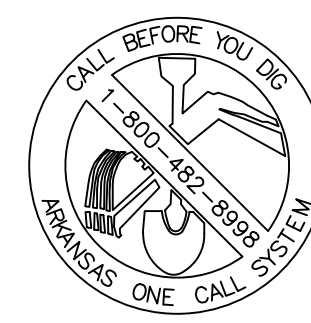
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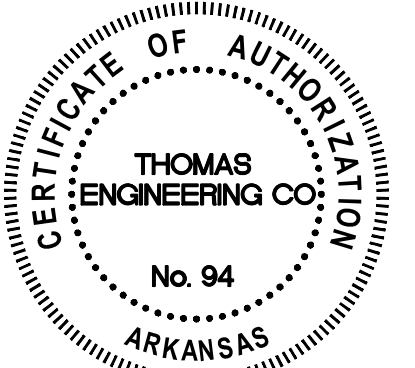
GRADING PLAN
HURRICANE STORAGE PH. 1
BRYANT, ARKANSAS

3810 LOOKOUT ROAD, N. LITTLE ROCK, AR. 72116
TEL: 501-753-4463 FAX: 501-753-6814

APPROVED	DRAWN BY	DATE	SHEET NO.
JRP	JRP	11/3/17	C 2.0
SCALE			
1" = 20'			

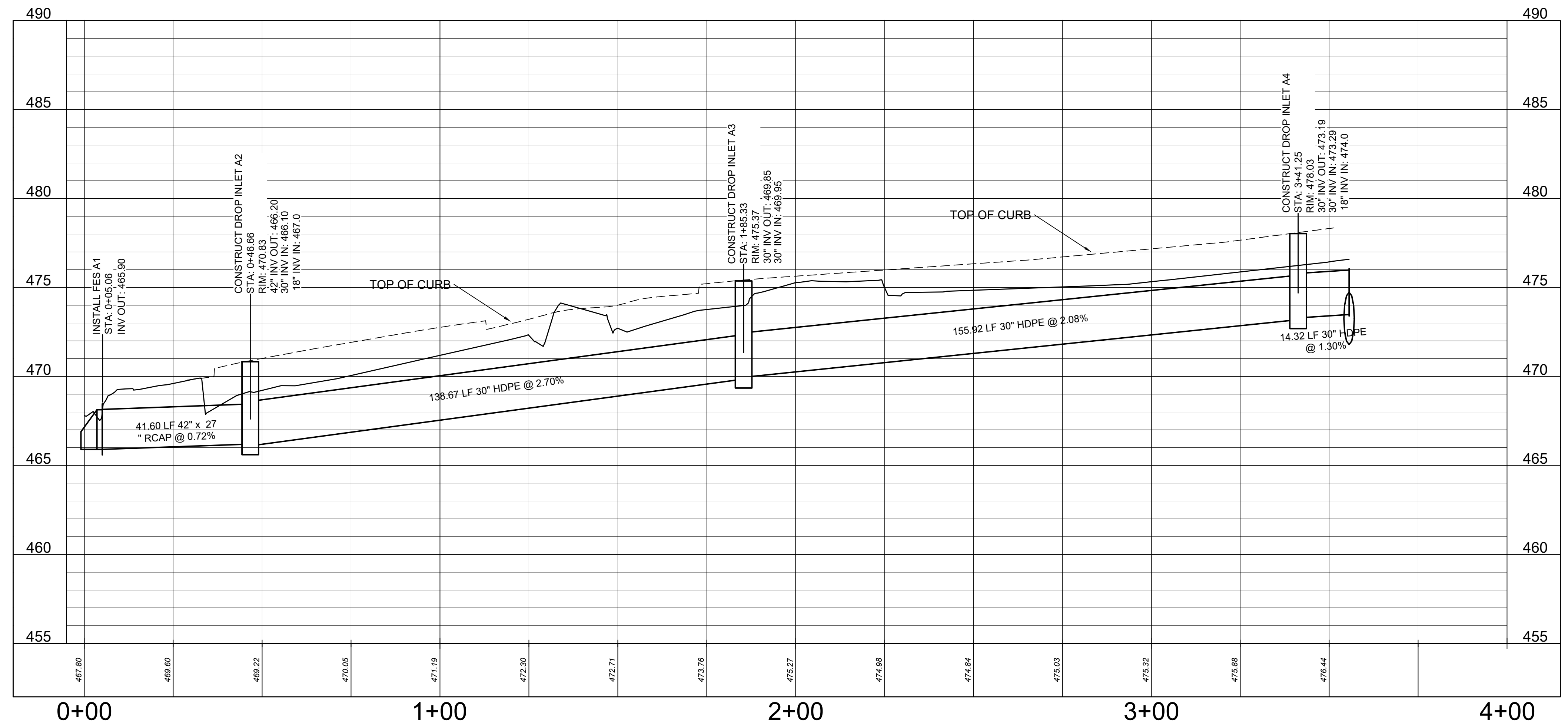
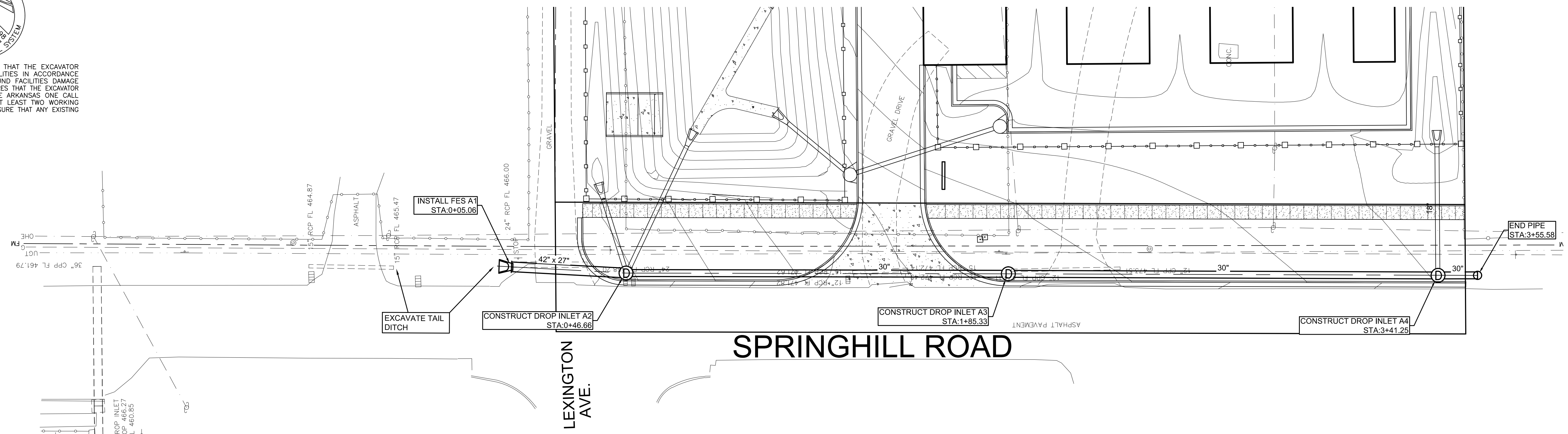


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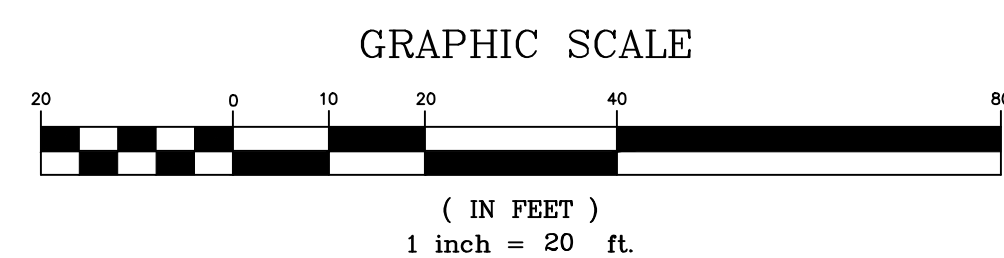
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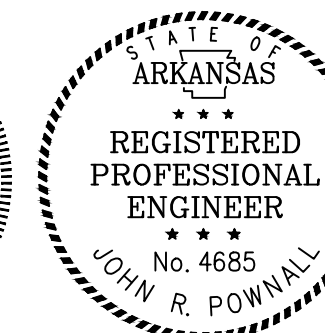
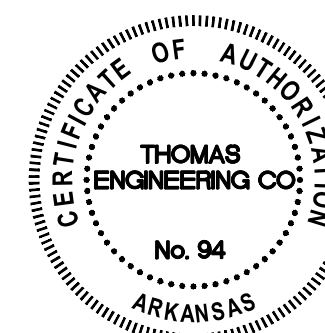
STORM DRAIN LINE A

HURRICANE STORAGE - BRYANT.dwg

PLOTTED: 11/13/2017



PRELIMINARY
NOT FOR CONSTRUCTION



TE THOMAS ENGINEERING COMPANY
 3810 LOOKOUT ROAD, N. LITTLE ROCK, AR. 72116
 TEL: 501-753-4463 FAX: 501-753-6814

PLAN & PROFILE STORM DRAIN LINE A STA. 0+00 TO STA. 4+00 HURRICANE STORAGE PH. 1			
APPROVED JRP	DRAWN BY JRP	DATE 11/13/17	SHEET NO. C 3.0
SCALE 1" = 20'		2-6/4-6	

HURRICANE STORAGE - BRYANT.dwg

PLOTTED: 11/3/2017

LEXINGTON AVE.

SPRINGHILL ROAD

ASPHALT PAVEMENT

GRAVEL DRIVE

GRAVEL DRIVE

GRAVEL DRIVE

GRAVEL DRIVE

GRAVEL DRIVE

GRAVEL DRIVE

GRAVEL DRIVE

GRAVEL DRIVE

GRAVEL DRIVE

GRAVEL DRIVE

24" RCP FL 466.00

EXISTING SEWER FORCE MAIN

8" CLASS 200 PVC PIPE FOR FUTURE FORCE MAIN. LOCATION BY BRYANT UTILITIES

6" PVC WATER MAIN

185 LF 1-1/4" PVC PRESSURE SERVICE LINE

200 LF 3/4" PVC WATER SERVICE LINE

TIE TO EXISTING WATER METER WITH NEW WATER SERVICE LINE

6" PVC WATER MAIN

38" - 12" ROAD BORE WITH STEEL ENCASMENT PIPE

INSTALL 6"x6" TEE, 6" VALVE & HYDRANT

8" CLASS 200 PVC PIPE FOR FUTURE FORCE MAIN. LOCATION BY BRYANT UTILITIES

EXISTING SEWER FORCE MAIN

GRAVEL DRIVE

GRAVEL DRIVE

GRAVEL DRIVE

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GRAVEL DRIVE

INSTALL E/ONE GRINDER PUMP STATION MODEL DH071-74 TIE TO 4" SEWER SERVICE LINE FROM NEW BUILDING. INSTALL 1-1/4" CHECK VALVE.

BLDG. E

4" SERVICE LINE AND CLEANOUT

BLDG. D

BLDG. C

BLDG. B

BLDG. A

RETAINING WALL

RETAINING WALL

UTILITY NOTES:

- CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES IN ACCORDANCE WITH THE ARKANSAS UNDERGROUND FACILITIES DAMAGE PREVENTION ACT. THIS LAW REQUIRES THAT THE CONTRACTOR MAKE A TELEPHONE CALL TO THE ARKANSAS ONE-CALL SYSTEM AT 1-800-482-8998 AT LEAST TWO (2) WORKING DAYS PRIOR TO EXCAVATING TO ENSURE THAT ANY EXISTING UTILITIES CAN BE LOCATED.
- CONTRACTOR TO UNCOVER AND MARK UTILITY LINES BEFORE CONSTRUCTION.
- CONTRACTOR SHALL BEAR ALL RESPONSIBILITY AND COST OF REPAIR OR REPLACEMENT OF EXISTING UTILITIES DAMAGED OR INTERRUPTED AS A RESULT OF THIS CONSTRUCTION.
- CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND THE OWNER OF ANY DAMAGED OR INTERRUPTED UTILITIES IMMEDIATELY.
- ALL SEWER MAINS, SERVICES AND APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE TO THE BRYANT WASTEWATER DEPARTMENT SPECIFICATIONS, THE ARKANSAS DEPARTMENT OF HEALTH AND THE ARKANSAS STATE PLUMBING CODE.
- ALL WATER LINES SERVICES AND APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE TO THE SALEM WATER USERS PWA REQUIREMENTS AND THE ARKANSAS STATE PLUMBING CODE.
- SEE PLUMBING PLANS FOR EXACT LOCATION OF UTILITY ENTRANCES TO THE BUILDING.
- CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF TRANSFORMER PAD AND PROVIDE THE MINIMUM SIZED PAD REQUIRED BY THE ELECTRIC UTILITY.
- IN AREAS WHERE UTILITIES ARE INSTALLED UNDER EXISTING ASPHALT THAT IS TO BE REPLACED WITH NEW ASPHALT PAVEMENT, REFER TO DETAIL "PIPE TRENCH & BACKFILL SECTION DETAIL UNDER NEW PAVEMENT." SAW CUT ASPHALT FOR UTILITY TRENCHES AND PROVIDE A MINIMUM OF 2" COLD MIX FOR TEMPORARY SURFACE UNTIL NEW PAVEMENT IS INSTALLED.

SANITARY SEWER GENERAL NOTES

- 4" SERVICE LINES AND STUBS SHALL BE LAID ON MINIMUM 1% SLOPE.
- MAINTAIN 10" MINIMUM CLEARANCE BETWEEN WATER AND SEWER LINES.
- 6" PVC FORCE MAIN SHALL BE SDR 21 OR AWWA C900 (DR 25 MIN.).

WATER NOTES:

- ALL PIPE TO HAVE A MINIMUM OF 3' OF COVER.
- ALL NON-METALLIC MAINS SHALL BE WRAPPED WITH 16 GA. COPPER WIRE.
- ALL P.V.C. PIPE SHALL BE CLASS 250.
- MAINTAIN 18" VERTICAL SEPARATION BETWEEN WATER/SEWER CROSSINGS.
- MAINTAIN 5' HORIZONTAL SEPARATION BETWEEN PARALLEL UTILITIES.

INSTALL 6" x 6" TAPPING SLEEVE & 6" VALVE

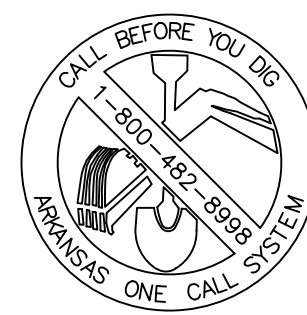
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INSTALL 6"x6" TEE, 6" VALVE & HYDRANT

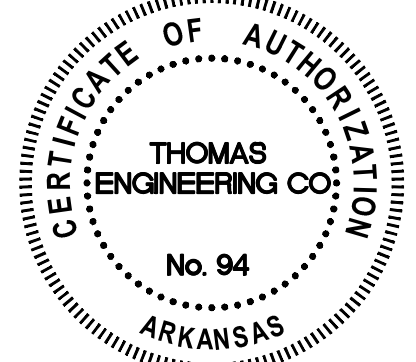
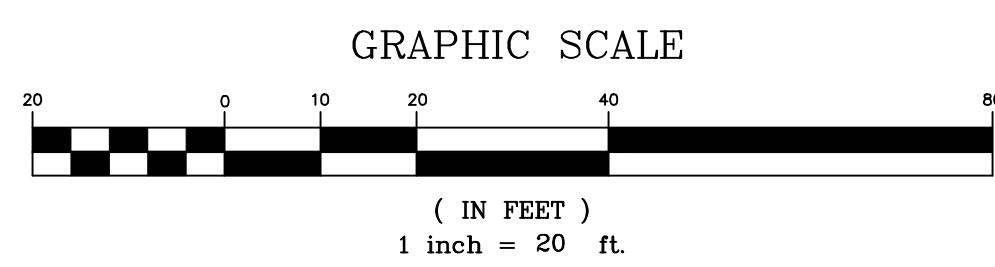
8" CLASS 200 PVC PIPE FOR FUTURE FORCE MAIN. LOCATION BY BRYANT UTILITIES

EXISTING SEWER FORCE MAIN

6" PLUG WITH BLOCKING



ARKANSAS STATE LAW REQUIRES THAT THE EXCAVATOR IS TO LOCATE ALL EXISTING UTILITIES IN ACCORDANCE WITH THE ARKANSAS UNDERGROUND FACILITIES DAMAGE PREVENTION ACT. THIS LAW REQUIRES THAT THE EXCAVATOR MAKE A TELEPHONE CALL TO THE ARKANSAS ONE CALL SYSTEM AT 1-800-482-8998 AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION TO INSURE THAT ANY EXISTING UTILITIES CAN BE LOCATED.



PRELIMINARY NOT FOR CONSTRUCTION

THOMAS ENGINEERING COMPANY
 3810 LOOKOUT ROAD, N. LITTLE ROCK, AR. 72116
 TEL: 501-753-4463 FAX: 501-753-6814

UTILITY PLAN HURRICANE STORAGE PH. 1 BRYANT, ARKANSAS

APPROVED	DRAWN BY	DATE	SHEET NO.
JRP	JRP	11/3/17	C 4.0
SCALE	2-6/4-6		
1" = 20'			

HURRICANE STORAGE - BRYANT.dwg

PLOTTED: 11/3/2017

LEXINGTON AVE.

SPRINGHILL ROAD

DISCHARGE TO BRYANT MS4

24" RCP FL 466.00

INSTALL ROCK CHECK DAM

INSTALL SILT FENCE

INSTALL SILT FENCE

INSTALL ROCK CHECK DAM

INSTALL ROCK CHECK DAM

INSTALL SILT FENCE

INSTALL GRAVELED CONSTRUCTION ENTRANCE TO PREVENT OFF-SITE TRACKING OF SOIL

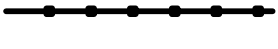

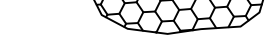



INSTALL SILT FENCE

INSTALL SILT FENCE

INSTALL ROCK CHECK DAM

INSTALL ROCK CHECK DAM

LEGEND

-  SHOWS SILT FENCE
-  SHOWS DRAINAGE ARROW
-  SHOWS ROCK CHECK DAM
-  1 PORT-A-POTTY LOCATION
-  2 SOLID WASTE DUMPSTER LOCATION
-  3 CONCRETE WASHOUT-OUT AREA

SEQUENCE OF CONSTRUCTION

1. INSTALL CONSTRUCTION ENTRANCE & POST ADEQ PERMIT.
2. INSTALL WHATEVER DIVERSIONS/SALES ARE NECESSARY TO ROUTE ALL SEDIMENT LADEN WATER TO SILT FENCING OR CHECK DAMS.
3. CLEAR THE SITE OF TREES AS DELINEATED ON THIS PLAN. LIMIT SOIL DISTURBING ACTIVITIES DURING CLEARING.
4. BEGIN GRADING FOR SITE.
5. INSTALL UNDERGROUND UTILITIES.
6. POUR BUILDING PADS AND GRADE FOR PAVING.
7. CONSTRUCT BUILDINGS.
8. PAVE THE SITE.
9. INSTALL PERMANENT SEEDING OF DISTURBED AREAS.
10. INSPECT AND RESEED ALL DISTURBED AREAS AS NECESSARY. UPON FINAL SITE STABILIZATION, CLEAN SILT FROM BEHIND ALL SEDIMENT FENCES AND INLET PROTECTION, AND REMOVE ALL TEMPORARY EROSION CONTROL DEVICES.

EROSION CONTROL NOTES:

1. SEDIMENT CONTROL MEASURES MUST BE INSPECTED AND MAINTAINED REGULARLY IN ORDER TO INSURE THAT THE INTENDED PURPOSES ARE ACCOMPLISHED.
2. ALL DISTURBED AREAS NOT INTENDED FOR PAVING SHALL BE SEED OR SOODED AS PER SPECIFICATIONS.
3. STABILIZATION REQUIREMENTS: (NOT NECESSARILY VEGETATION) ALL PERIMETER CONTROLS ARE TO BE STABILIZED WITHIN 7 DAYS OF INSTALLATION. ALL OTHER DISTURBED AREAS ARE TO BE STABILIZED WITHIN 14 DAYS.
4. TEMPORARY SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL ALL CONTRIBUTING AREAS ARE GRADED AND STABILIZED.
5. EXCAVATED EARTH SHALL BE PILED ON THE HIGH SIDE OF EXCAVATIONS.
6. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
7. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES.
8. DISTURBED AREA: 3.23 AC
TOTAL SITE AREA THIS PHASE 3.23 AC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4685
JOHN R. POWNALL

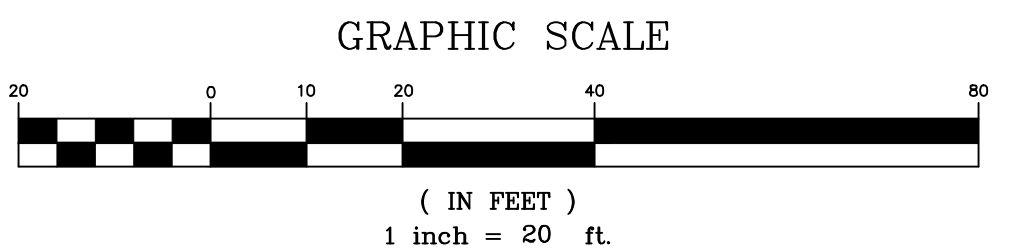
CERTIFICATE OF AUTHORIZATION
THOMAS ENGINEERING CO.
No. 94
ARKANSAS

PRELIMINARY NOT FOR CONSTRUCTION

TE THOMAS ENGINEERING COMPANY
3810 LOOKOUT ROAD, N. LITTLE ROCK, AR. 72116
TEL: 501-753-4463 FAX: 501-753-6814

EROSION CONTROL PLAN
HURRICANE STORAGE PH. 1
BRYANT, ARKANSAS

APPROVED	DRAWN BY	DATE	SHEET NO.
	JRP	11/3/17	C 5.0
SCALE			
1" = 20'			



ARKANSAS STATE LAW REQUIRES THAT THE EXCAVATOR IS TO LOCATE ALL EXISTING UTILITIES IN ACCORDANCE WITH THE ARKANSAS UNDERGROUND FACILITIES DAMAGE PREVENTION ACT. THIS LAW REQUIRES THAT THE EXCAVATOR MAKE A TELEPHONE CALL TO THE ARKANSAS ONE CALL SYSTEM AT 1-800-452-5888 AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION TO INSURE THAT ANY EXISTING UTILITIES CAN BE LOCATED.

SITE WITH AUTOMATIC COVERAGE (LESS THAN 5 ACRES) CONSTRUCTION SITE NOTICE

FOR THE
Arkansas Department of Environmental Quality (ADEQ)
Storm Water Program
NPDES GENERAL PERMIT NO. ARR150000

The following information is posted in compliance with **Part I.B.8.b** of the ADEQ General Permit Number **ARR150000** for discharges of stormwater runoff from sites with automatic coverage. Additional information regarding the ADEQ stormwater program may be found on the internet at:

www.aeq.state.ar.us/water/branch_npdes/stormwater

Permit Number	ARR150000
Contact Name: Phone Number:	<u>Stuart Finley</u> <u>501-258-9646</u>
Project Description (Name, Location, etc.): Start Date: End Date: Total Acres:	<u>Hurricane Storage – 4302 Springhill Road Bryant, AR</u> <u>11/1/17</u> <u>6/1/18</u> <u>3.23 AC</u>
Location of Stormwater Pollution Prevention Plan:	<u>Construction Site Entrance on Springhill Road</u>

For Construction Sites Authorized under **Part I.B.6.b** (Automatic Coverage) the following certification must be completed:

I Stuart Finley (Typed or Printed Name of Person Completing this Certification) certify under penalty of law that I have read and understand the eligibility requirements for claiming an authorization under Part I.B.2. of the ADEQ General Permit Number ARR150000. A stormwater pollution prevention plan has been developed and implemented according to the requirements contained in Part II.A.2.B & D of the permit. I am aware there are significant penalties for providing false information or for conducted unauthorized discharges, including the possibility of fine and imprisonment for knowing violations.

Signature and Title

Date

Stormwater Pollution Prevention Plan (SWPPP) for Construction Activity
for Small Construction Sites

National Pollutant Discharge Elimination System (NPDES)
General Permit # ARR150000

Prepared for:
HURRICANE STORAGE
4302 SPRINGHILL ROAD
BRYANT, AR 72022
OPERATOR: FINLEY & COMPANY
408 OFFICE PARK DRIVE
BRYANT, AR 72022

Date: 10/18/17

Prepared by:
THOMAS R. POWNALL, P.E.
THOMAS ENGINEERING COMPANY

Project Name and Location: HURRICANE STORAGE- 4302 SPRINGHILL ROAD, BRYANT, AR 72022

Property Parcel Number (Optional): _____

Operator Name and Address: FINLEY & COMPANY (STUART FINLEY) 408 OFFICE PARK DRIVE, BRYANT, AR 722022

Site Description

- a. Project description, intended use after NOI is filed: COMMERCIAL/STORAGE FACILITY
- b. Sequence of major activities which disturb soils: INSTALL EROSION CONTROL DEVICES AND POST ADEQ PERMIT, GRADE SITE, INSTALL UNDERGROUND UTILITIES, POUR SLABS, ERECT BUILDINGS, INSTALL CURB & GUTTER AND PAVEMENT, FINE GRADE SITE, INSTALL PERMANENT SEEDING/LANDSCAPING, REMOVE EROSION CONTROL DEVICES.
- c. Total Area: 3.23 AC Disturbed Area: 3.23 AC

B. Responsible Parties

Individual/Company	Phone Number	Service Provided for SWPPP (i.e., Inspector, SWPPP revisions, Stabilization Activities, BMP Maintenance, etc.)
STUART FINLEY	501-258-9646	OPERATOR/OWNER
STUART FINLEY	501-258-9646	COGNIZANT OFFICIAL,
SITE CONTRACTOR (TBD)		

C. Receiving Waters

The following waterbody (or waterbodies) receives stormwater from this construction site: Side ditch of Springhill Road; thence west to Hurricane Lake thence to Hurricane Creek; Hurricane Creek flows southerly approximately 90 miles to the Saline River near Farindale; The Saline River travels southerly and joins the Ouachita River at Lake Jack Lee.

- a. _____
- b. Is the project located within the jurisdiction of an MS4? X Yes No
 - i. If yes, Name of MS4: _____ CITY OF BRYANT, AR

c. Ultimate Receiving Water:

- | | |
|------------------------------------|--|
| <input type="checkbox"/> Red River | <input type="checkbox"/> White River |
| X Ouachita River | <input type="checkbox"/> St. Francis River |
| Arkansas River | <input type="checkbox"/> Mississippi River |

D. Site Map Requirements (Attach Site Map):

- a. Pre-construction topographic view;
- b. Direction of stormwater flow (i.e., use arrows to show which direction stormwater will flow) and approximate slopes anticipated after grading activities;
- c. Delineate on the site map areas of soil disturbance and areas that will not be disturbed under the coverage of this permit;
- d. Location of major structural and nonstructural controls identified in the plan;
- e. Location of main construction entrance and exit;
- f. Location where stabilization practices are expected to occur;
- g. Locations of off-site materials, waste, borrow area, or equipment storage area;
- h. Location of areas used for concrete wash-out;
- i. Location of all surface water bodies (including wetlands);
- j. Locations where stormwater is discharged to a surface water and/or municipal separate storm sewer system if applicable,
- k. Locations where stormwater is discharged off-site (should be continuously updated);
- l. Areas where final stabilization has been accomplished and no further construction phase permit requirements apply.

E. Stormwater Controls

a. Initial Site Stabilization, Erosion and Sediment Controls, and Best Management Practices:

- i. Initial Site Stabilization: AREA IS FULLY GRASSED/VEGETATED. WILL INSTALL SILT FENCING AND/OR "WADDLES", ROCK CHECK DAMS, CONSTRUCTION ENTRANCE _____
- ii. Erosion and Sediment Controls: SILT FENCE, CONSTRUCTION EXIT, , ROCK CHECK DAM, DETENTION BASIN,
- iii. If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, the operator will replace or modify the control for site situations: X Yes No

If No, explain: _____

- iv. Off-site accumulations of sediment will be removed at a frequency sufficient to minimize off-site impacts: X Yes No
If No, explain: _____

- v. Sediment will be removed from sediment traps or sedimentation ponds when design capacity has been reduced by 50%: X Yes No
If No, explain: _____

- vi. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges: X Yes No
If No, explain: _____

- vii. Off-site material storage areas used solely by the permitted project are being covered by this SWPPP: Yes X No
If Yes, explain additional BMPs implemented at off-site material storage area: _____

b. Stabilization Practices

- i. Description and Schedule: SILT FENCE, ROCK CHECK DAMS, SOD, SEEDING, GRAVEL, PERMANENT LANDSCAPING
- ii. Are buffer areas required? Yes No
If Yes, are buffer areas being used? X Yes No
If No, explain why not: _____

If Yes, describe natural buffer areas
- iii. A record of the dates when grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be included with the plan.
X Yes No
If No, explain: _____

- iv. Deadlines for stabilization: Stabilization procedures will be initiated 14 days after construction activity temporarily ceases on a portion of the site.

c. Structural Practices

- i. Describe any structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site DETENTION BASIN AND SILT FENCE/WADDLES.

ROCK CHECK DAM AT EXIT PIPE OF DETENTION

BASIN

- ii. Sediment Basins:

Are 10 or more acres draining to a common point? Yes X No

Is a sediment basin included in the project? Yes X No

If Yes, what is the designed capacity for the storage?

3600 cubic feet per acre = : _____

or

10 year, 24 hour storm = : _____

Other criteria were used to design basin: _____

If No, explain why no sedimentation basin was included and describe required natural buffer areas and other controls implemented instead: TOTAL PROJECT SITE IS 3.23 ACRES

Describe Velocity Dissipation Devices: SILT FENCE,, ROCK CHECK DAM DETENTION BASIN

F. Other Controls

- a. Solid materials, including building materials, shall be prevented from being discharged to Waters of the State: X Yes No

- b. Off-site vehicle tracking of sediments and the generation of dust shall be minimized through the use of:

X A stabilized construction entrance and exit

Vehicle tire washing

Other controls, describe: _____

- c. Temporary Sanitary Facilities: PORTA POTTY ON SITE

- d. Concrete Waste Area Provided:

X Yes

No. Concrete is used on the site, but no concrete washout is provided.

Explain why: _____

N/A, no concrete will be used with this project

- e. Fuel Storage Areas, Hazardous Waste Storage, and Truck Wash Areas: NONE
NEEDED FOR CONSTRUCTION

G. Non-Stormwater Discharges

- a. The following allowable non-stormwater discharges comingled with stormwater are present or anticipated at the site:

- Fire-fighting activities;

- Fire hydrant flushings;

- Water used to wash vehicles (where detergents or other chemicals are not used) or control dust in accordance with Part II.A.4.H.2;

- Potable water sources including uncontaminated waterline flushings;

- Landscape Irrigation;

- Routine external building wash down which does not use detergents or other chemicals;

- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents or other chemicals are not used;

- Uncontaminated air conditioning, compressor condensate (See Part I.B.12.C of the permit);,

- Uncontaminated springs, excavation dewatering and groundwater (See Part I.B.12.C of the permit);

- Foundation or footing drains where flows are not contaminated with process materials such as solvents (See Part I.B.12.C of the permit);

- b. Describe any controls associated with non-stormwater discharges present at the site: _____

- H. Applicable State or Local Programs: The SWPPP will be updated as necessary to reflect any revisions to applicable federal, state, or local requirements that affect the stormwater controls implemented at the site. X Yes No

I. Inspections

- a. Inspection frequency:

- Every 7 calendar days

- or

- At least once every 14 calendar days and within 24 hours of the end of a storm even 0.5 inches or greater (a rain gauge must be maintained on-site)

- b. Inspections:

- Completed inspection forms will be kept with the SWPPP.

- ADEQ's inspection form will be used (See Appendix B)

- or

- A form other than ADEQ's inspection form will be used and is attached (See inspection form requirements Part II.A.4.L.2)

- c. Inspection records will be retained as part of the SWPPP for at least 3 years from the date of termination.
- d. It is understood that the following sections describe waivers of site inspection requirements. All applicable documentation requirements will be followed in accordance with the referenced sections.
 - i. Winter Conditions (Part II.A.4.L.3)
 - ii. Adverse Weather Conditions (Part II.A.4.L.4)

J. Maintenance:

The following procedures to maintain vegetation, erosion and sediment control measures and other protective measures in good, effective operating condition will be followed: SITE VISITS AFTER RAINS TO REMOVE SEDIMENT BUILD UP AT A MINIMUM OF 7 CALENDAR DAYS.

Any necessary repairs will be completed, when practicable, before the next storm event, but not to exceed a period of 3 business days of discovery, or as otherwise directed by state or local officials.

K. Employee Training:

The following is a description of the training plan for personnel (including contractors and subcontractors) on this project: COGNIZANT OFFICIAL IS AN EXPERINCED DEVELOPER FAMILIAR WITH ADEQ REQUIREMENTS FOR INSPECTION AND EROSION CONTROL

**Note, Formal training classes given by Universities or other third-party organizations are not required, but recommended for qualified trainers; the permittee is responsible for the content of the training being adequate for personnel to implement the requirements of the permit.

Certification

"I certify under penalty of law that this document and all attachments such as Inspection Form were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Responsible or Cognizant Official: _____

Title: _____

Date: _____

ARR150000 Inspection Form

Appendix A

Inspector Name: _____

Date of Inspection: _____

Inspector Title: _____

Date of Rainfall: _____

Duration of Rainfall: _____

Days Since Last Rain Event: _____ days

Rainfall Since Last Rain Event: _____ inches

Description of any Discharges During Inspection: _____

Location of Discharges of Sediment/Other Pollutant (specify pollutant & location): _____

Locations in Need of Additional BMPs: _____

Information on Location of Construction Activities

Location	Activity Begin Date	Activity Occuring Now (y/n)?	Activity Ceased Date	Stabilization Initiated Date	Stabilization Complete Date

Information on BMPs in Need of Maintenance

Location	In Working Order?	Maintenance Scheduled Date	Maintenance Completed Date	Maintenance to be Performed By

Changes required to the SWPPP: _____

Reasons for changes: _____

SWPPP changes completed (date): _____

"I certify under penalty of law that this document and all attachments such as Inspection Form were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Responsible or Cognizant Official: _____ Date: _____

Title: _____

HURRICANE STORAGE

7/18/17

BRYANT

DETENTION CALCULATIONS

AREA = 5.81 AC.

25 YEAR STORM

EXISTING

$$C_E = 0.42 \text{ (DEV., FAIR COND, 2-7\%)} \text{ TAB. 400-2}$$

$$t_{\text{OVERLAND}} = 12 \text{ MIN (L=150, n=0.4, S=4\%)}$$

EXH. 400-3

$$t_{\text{CHANNEL}} = 2 \text{ MIN (L=775, n=0.2, S=3\%)}$$

EXH. 400-3

$$t_E = 12 + 2 = 14 \text{ MIN}$$

$$I_{25E} = 6.4$$

$$I_{100E} = 8.0$$

DEVELOPED

$$C_D = 0.88 \text{ (DEV. CONC/ROOF)}$$

$$t_{\text{OVER}} = 0.3 \text{ MIN (L=110, PAV., 1\%)}$$

$$t_{\text{PIPE}} = 2 \text{ MIN, (720 FT / 6 FPS / 60 SEC)}$$

$$t_D = 5 \text{ MIN. (MIN)}$$

$$I_{25D} = 8.5$$

$$I_{100D} = 10.0$$

DESIGN DISCHARGE

$$Q_{25E} = C I A$$

$$= (0.42)(6.4)(5.81)$$

$$= \underline{\underline{15.6 \text{ CFS}}}$$

DEVELOPED DISCHARGE

$$Q_{25D} = C I A$$

$$= (0.88)(8.5)(5.81)$$

$$= \underline{\underline{43.5 \text{ CFS}}}$$

STORAGE REQUIRED

$$S = \frac{1}{2} (Q_D - Q_E) T_D \times 60 \text{ (CITY OF LB)}$$

$$= \frac{1}{2} (43.5 - 15.6) (2.67 \times 5) (60)$$

$$= 11,200 \text{ C.F.}$$

VOLUME OF DETENTION BASIN

<u>ELEV</u>	<u>AREA (ft²)</u>	<u>VOLUME (ft³)</u>
469	3087	3591
470	4095	4638
471	5182	5769
472	6357	

13,998 ft³ vs 11,200 c.f.
OK

OUTLET STRUCTURE

$$Q_{25} = 15.6 \text{ CFS}$$

TRY 18" RCP

$$\frac{HW}{D} = 2.2 \text{ (3) (FIG. 4-17 LPA)}$$

$$HL \text{ PIPE} = 468.8$$

$$HW = 3.3 \text{ FT. (WATER DEPTH)} = 472.1 \text{ WATER ELEV.}$$

USE 18" RCP WITH SPILLWAY ELEV = 473.0

$$\begin{aligned} \text{SPILLWAY } Q_s &= Q_{100} - Q_{25} \\ &= 51.6 - 15.6 = 35.5 \text{ CFS} \end{aligned}$$

USE 16' BOTTOM WEIR 0.76' DEEP (8")
 $Q = 35.5 \text{ CFS}$

100 YEAR STORM

DESIGN DISCHARGE

$$\begin{aligned} Q_{100E} &= C I A \\ &= (0.42)(8)(5.81) \\ &= \underline{\underline{19.5 \text{ CFS}}} \end{aligned}$$

DEVELOPED DISCHARGE

$$\begin{aligned} Q_{100D} &= C I A \\ &= (0.88)(10)(5.81) \\ &= \underline{\underline{51.1 \text{ CFS}}} \end{aligned}$$

STORAGE REQUIRED

$$\begin{aligned} S &= \frac{1}{2} (Q_D - Q_E) T_b \times 60 \\ &= \frac{1}{2} (51.1 - 19.5) (2.67 \times 5) (60) \\ &= \underline{\underline{12,660 \text{ C.F.}}} \end{aligned}$$

Weir Report

<Name>

Rectangular Weir

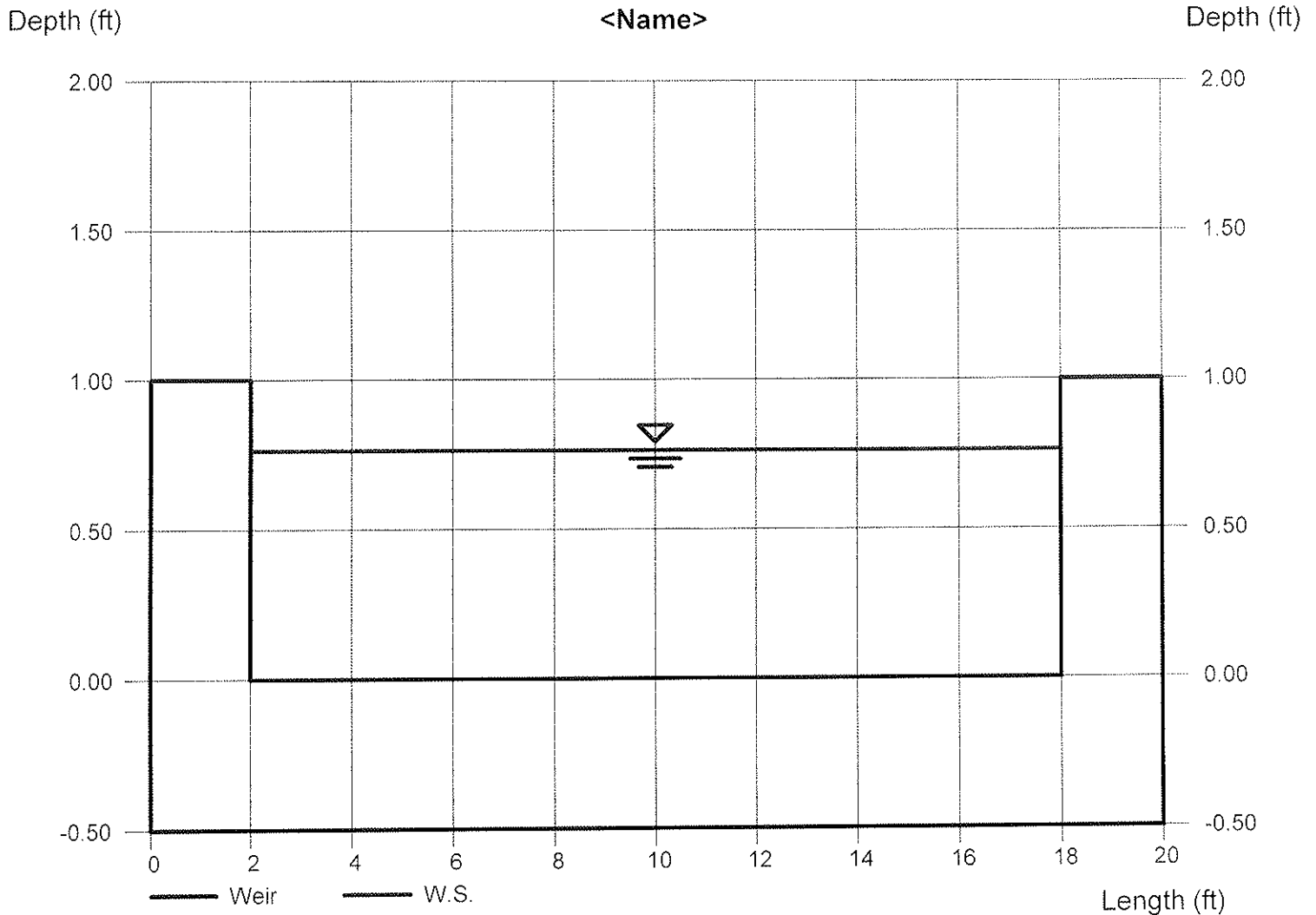
Crest = Sharp
Bottom Length (ft) = 16.00
Total Depth (ft) = 1.00

Highlighted

Depth (ft) = 0.76
Q (cfs) = 35.50
Area (sqft) = 12.20
Velocity (ft/s) = 2.91
Top Width (ft) = 16.00

Calculations

Weir Coeff. Cw = 3.33
Compute by: Known Q
Known Q (cfs) = 35.50



Hydrology Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

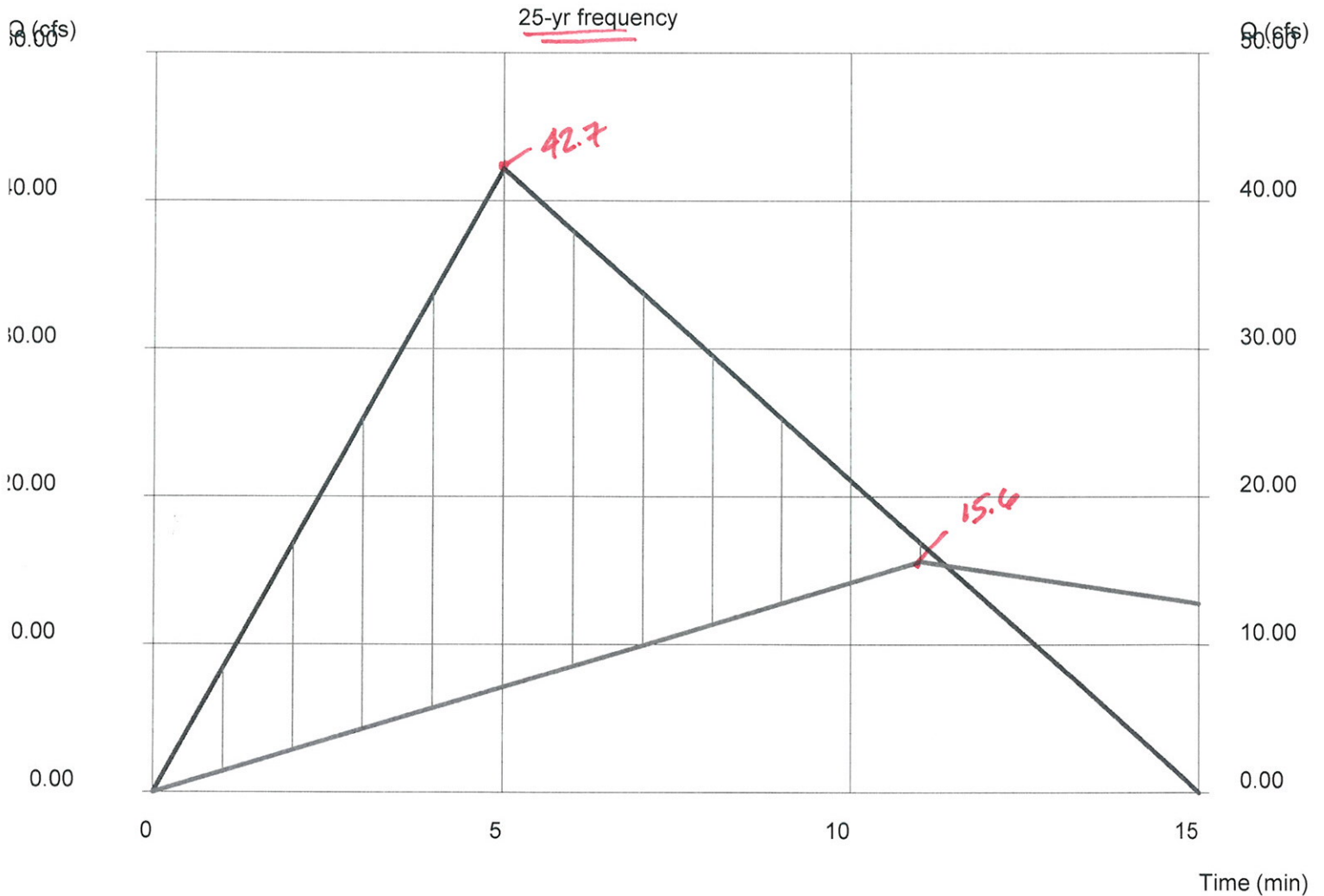
Wednesday, Oct 18 2017

<Name>

Hydrograph type	= Rational	Peak discharge (cfs)	= 42.17
Storm frequency (yrs)	= 25	Time interval (min)	= 1
Drainage area (ac)	= 5.810	Runoff coeff. (C)	= 0.88
Rainfall Inten (in/hr)	= 8.247	Tc by User (min)	= 5
IDF Curve	= SampleExpress.IDF	Rec limb factor	= <u>2.00</u>

Hydrograph Volume = 18,975 (cuft); 0.436 (acft)

Runoff Hydrograph



Runoff Hyd - Qp = 42.17 (cfs)

Outflow Hyd *



Req. Stor = 11,841 (cuft) *

* Estimated

Outflow Hydrograph	Detention
Volume	Required Storage
(cuft)	(cuft)
0.00	0.00
85.09	420.91
255.27	1,263
510.55	2,525
850.91	4,209
1,276	6,314
1,787	8,080
2,383	9,508
3,063	10,599
3,829	11,351
4,680	11,765
5,616	11,841
6,509	0.00
7,360	0.00
8,169	0.00
8,935	0.00

Runoff Hydrograph			Outflow Hydrograph
Time	Q	Volume	Q
(min)	(cfs)	(cuft)	(cfs)
0	0.000	0.00	0.000
1	8.433	253.00	1.418
2	16.87	1,012	2.836
3	25.30	2,277	4.255
4	33.73	4,048	5.673
5	42.17	6,325	7.091
6	37.95	8,729	8.509
7	33.73	10,879	9.927
8	29.52	12,777	11.35
9	25.30	14,421	12.76
10	21.08	15,813	14.18
11	16.87	16,951	15.60
12	12.65	17,837	14.89
13	8.433	18,469	14.18
14	4.217	18,849	13.47
15	0.000	18,975	12.76

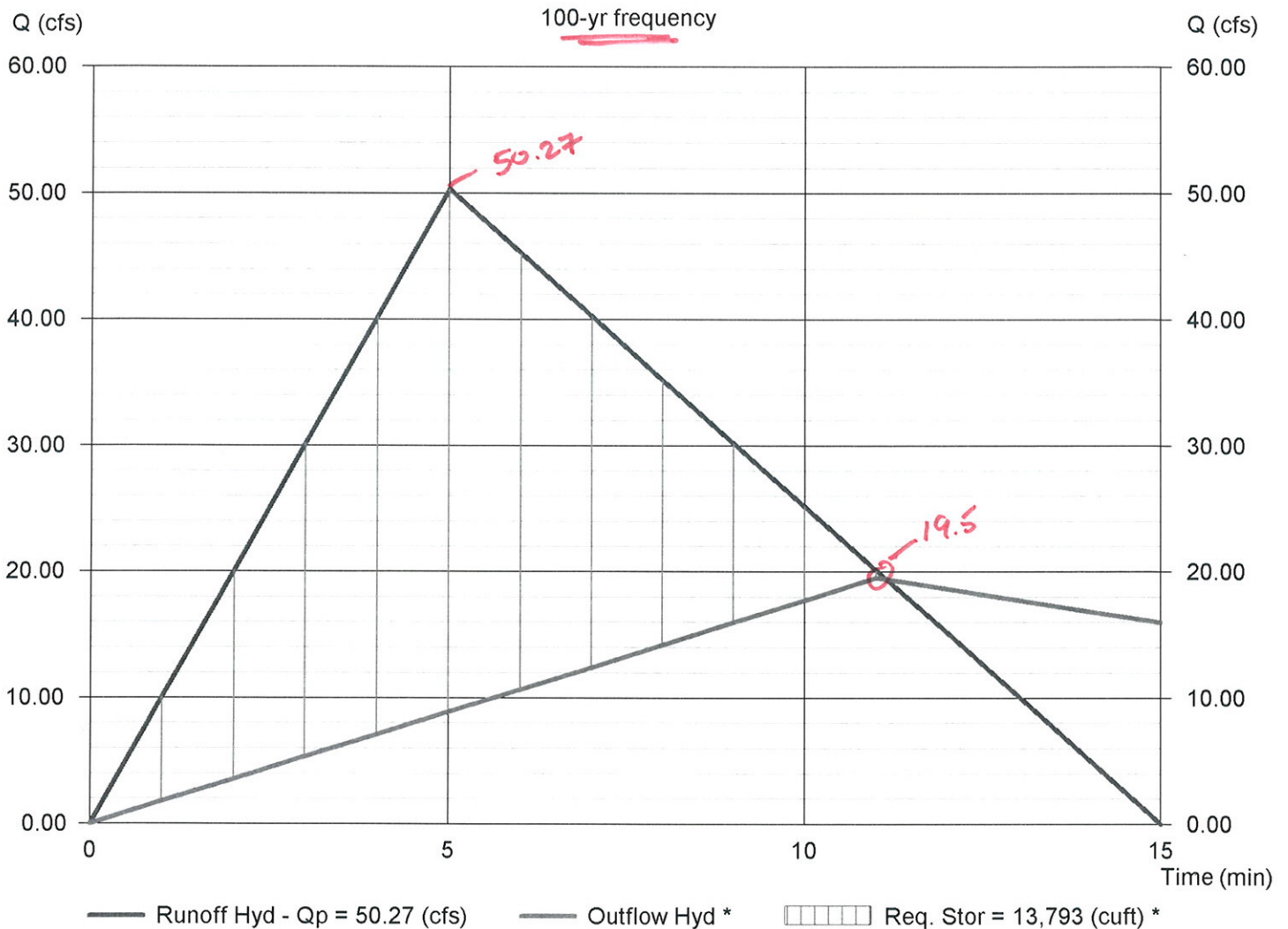
Hydrology Report

<Name>

Hydrograph type	= Rational	Peak discharge (cfs)	= 50.27
Storm frequency (yrs)	= 100	Time interval (min)	= 1
Drainage area (ac)	= 5.810	Runoff coeff. (C)	= 0.88
Rainfall Inten (in/hr)	= 9.833	Tc by User (min)	= 5
IDF Curve	= SampleExpress.IDF	Rec limb factor	= <u>2.00</u>

Hydrograph Volume = 22,623 (cuft); 0.519 (acft)

Runoff Hydrograph



* Estimated

Runoff Hydrograph			Outflow Hydrograph
Time	Q	Volume	Q
(min)	(cfs)	(cuft)	(cfs)
0	0.000	0.00	0.000
1	10.05	301.64	1.773
2	20.11	1,207	3.545
3	30.16	2,715	5.318
4	40.22	4,826	7.091
5	50.27	7,541	8.864
6	45.25	10,407	10.64
7	40.22	12,971	12.41
8	35.19	15,233	14.18
9	30.16	17,193	15.95
10	25.14	18,852	17.73
11	20.11	20,210	19.50
12	15.08	21,266	18.61
13	10.05	22,020	17.73
14	5.027	22,472	16.84
15	0.000	22,623	15.95

Outflow Hydrograph	Detention
Volume	Required Storage
(cuft)	(cuft)
0.00	0.00
106.36	496.92
319.09	1,491
638.18	2,981
1,064	4,969
1,595	7,454
2,234	9,530
2,978	11,199
3,829	12,459
4,786	13,312
5,850	13,757
7,020	13,793
8,137	0.00
9,200	0.00
10,211	0.00
11,168	0.00

Culvert Report

RETENTION CULVERT/PIPE

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

Wednesday, Oct 18 2017

Circular Culvert

Invert Elev Dn (ft) = 68.20
 Pipe Length (ft) = 42.00
 Slope (%) = 1.43
 Invert Elev Up (ft) = 68.80
 Rise (in) = 18.0
 Shape = Circular
 Span (in) = 18.0
 No. Barrels = 1
 n-Value = 0.013
 Culvert Type = Circular Concrete
 Culvert Entrance = Groove end projecting (C)
 Coeff. K,M,c,Y,k = 0.0045, 2, 0.0317, 0.69, 0.2

Calculations

Qmin (cfs) = 1.00
 Qmax (cfs) = 19.50
 Tailwater Elev (ft) = (dc+D)/2

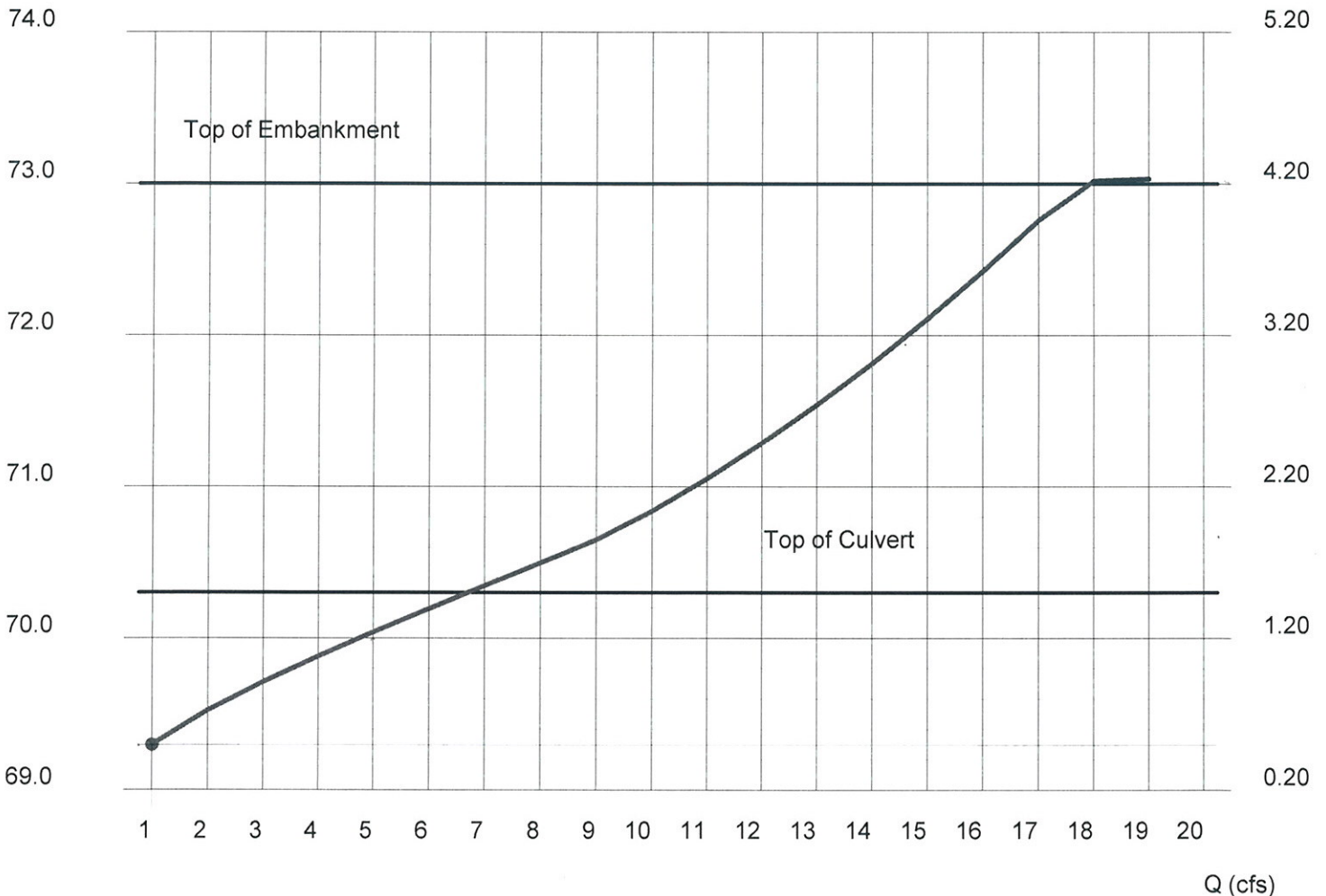
Highlighted

Qtotal (cfs) = 1.00
 Qpipe (cfs) = 1.00
 Qovertop (cfs) = 0.00
 Veloc Dn (ft/s) = 0.86
 Veloc Up (ft/s) = 2.92
 HGL Dn (ft) = 69.14
 HGL Up (ft) = 69.17
 Hw Elev (ft) = 69.30
 Hw/D (ft) = 0.33
 Flow Regime = Inlet Control
 Hw Depth (ft)

Embankment

Top Elevation (ft) = 73.00
 Top Width (ft) = 3.00
 Crest Width (ft) = 50.00

Performance Curve



● Outlet Control — Inlet Control — Overtopping

Q			Veloc		Depth	
Total	Pipe	Over	Dn	Up	Dn	Up
(cfs)	(cfs)	(cfs)	(ft/s)	(ft/s)	(in)	(in)
1.00	1.00	0.00	0.86	2.92	11.24	4.47
2.00	2.00	0.00	1.57	3.56	12.20	6.39
3.00	3.00	0.00	2.20	4.02	12.95	7.90
4.00	4.00	0.00	2.79	4.42	13.59	9.18
5.00	5.00	0.00	3.35	4.77	14.16	10.32
6.00	6.00	0.00	3.89	5.12	14.67	11.34
7.00	7.00	0.00	4.41	5.45	15.14	12.28
8.00	8.00	0.00	4.92	5.79	15.57	13.14
9.00	9.00	0.00	5.43	6.14	15.96	13.91
10.00	10.00	0.00	5.94	6.51	16.31	14.61
11.00	11.00	0.00	6.45	6.90	16.62	15.23
12.00	12.00	0.00	6.97	7.32	16.88	15.76
13.00	13.00	0.00	7.50	7.75	17.10	16.23
14.00	14.00	0.00	8.03	7.92	17.28	18.00
15.00	15.00	0.00	8.57	8.49	17.43	18.00
16.00	16.00	0.00	9.12	9.05	17.54	18.00
17.00	17.00	0.00	9.67	9.62	17.63	18.00
18.00	17.74	0.26	10.08	10.04	17.69	18.00
19.00	17.78	1.22	10.10	10.06	17.69	18.00

68.8 FL

Q

cls

HGL			
Dn	Up	Hw	Hw/D
(ft)	(ft)	(ft)	
69.14	69.17	69.30	0.33
69.22	69.33	69.52	0.48
69.28	69.46	69.71	0.61
69.33	69.56	69.88	0.72
69.38	69.66	70.04	0.83
69.42	69.75	70.19	0.93
69.46	69.82	70.35	1.03
69.50	69.89	70.50	1.13
69.53	69.96	70.65	1.23
69.56	70.02	70.84	1.36
69.58	70.07	71.05	1.50
69.61	70.11	71.29	1.66
69.63	70.15	71.54	1.83
69.64	70.37	71.81	2.01
69.65	70.48	72.11	2.21
69.66	70.60	72.42	2.42
69.67	70.73	72.76	2.64
69.67	70.83	73.02	2.81
69.67	70.83	73.03	2.82

1

2

3

4

5

1.2'

6

7

8

9

10

11

12

13

14

15

3.2'

16

17

18

19



CIVIL ENGINEERS LAND SURVEYORS

ROUTE TIXE 25 YEAR STORM

INFLOW HYDROGRAPH

- DIMENSIONLESS HYDROGRAPH

$$\frac{t}{t_p}$$

$$\frac{Q}{Q_p}$$

0.5

0.4

1.0

1.0

1.5

0.6

2.0

0.3

3.0

0.07

$$t_p = \frac{25}{25} \text{ 5 MIN}$$

$$Q_p = \frac{43.5}{25}$$

(DEVELOPED FLOW)

t

Q

2.5

17.4

5

43.5

7.5

26.10

10

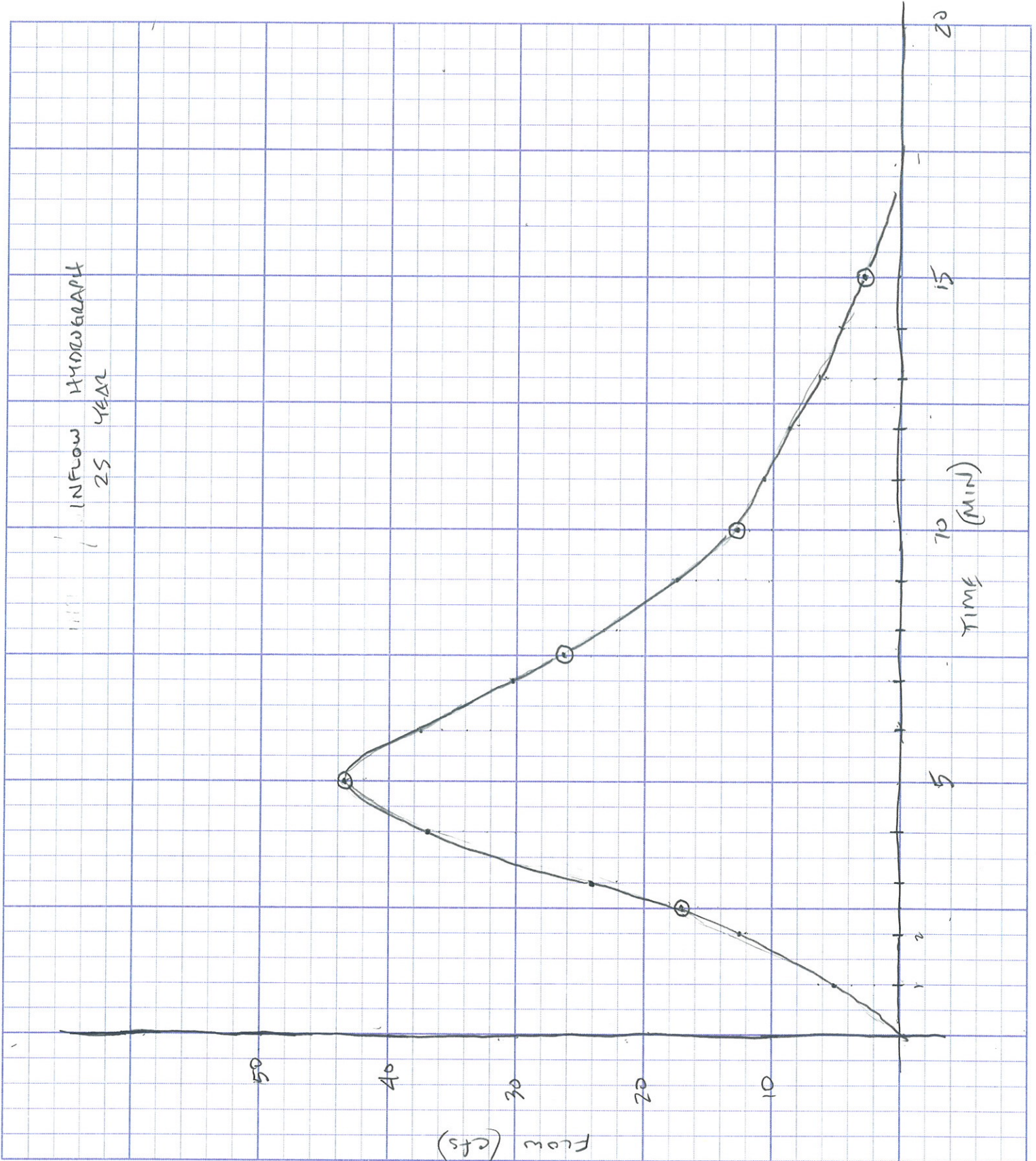
13.05

15

3.05

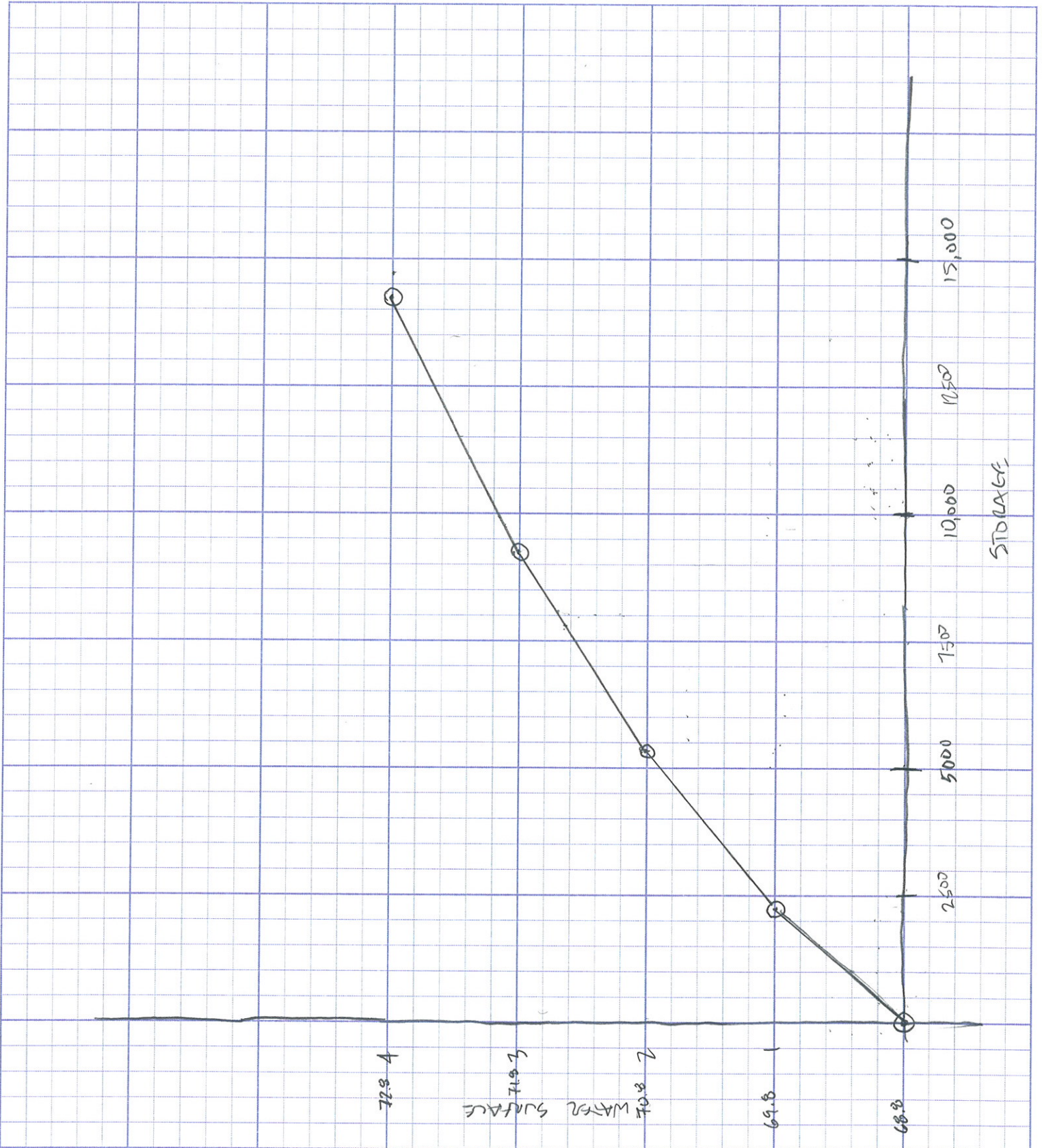


CIVIL ENGINEERS LAND SURVEYORS





CIVIL ENGINEERS LAND SURVEYORS





CIVIL ENGINEERS LAND SURVEYORS

25 YEAR ROUTE

TIME	Cfs INFLOW	Fi ³ STORAGE	Cfs OUTFLOW
0	0	0 $\Delta S = 0$	0
1	5	0 $\Delta S = 300$	0
2	12.5	300 $\Delta S = 750$	0
3	24	1050 $\Delta S = 1380$	1
4	37	2430 $\Delta S = 1980$	4
5	43.5	4410 $\Delta S = 2130$	8
6	37.5	6540 $\Delta S = 1560$	11.5
7	31.5	8100 $\Delta S = 1110$	13.0
8	23	9210 $\Delta S = 540$	14.0
9	17.5	9750 $\Delta S = 180$	14.5
10	13.0	9930 $\Delta S = -102$	14.7
11	10.8	9828 $\Delta S = -228$	14.6
12	9.0	9600	
13	6.3		
14	4.5		
15	3.0		

WATER ELEV 72.0 RELEASE RATE 147
 MAX STORAGE NEEDED

9930 Fi³

25 YEAR

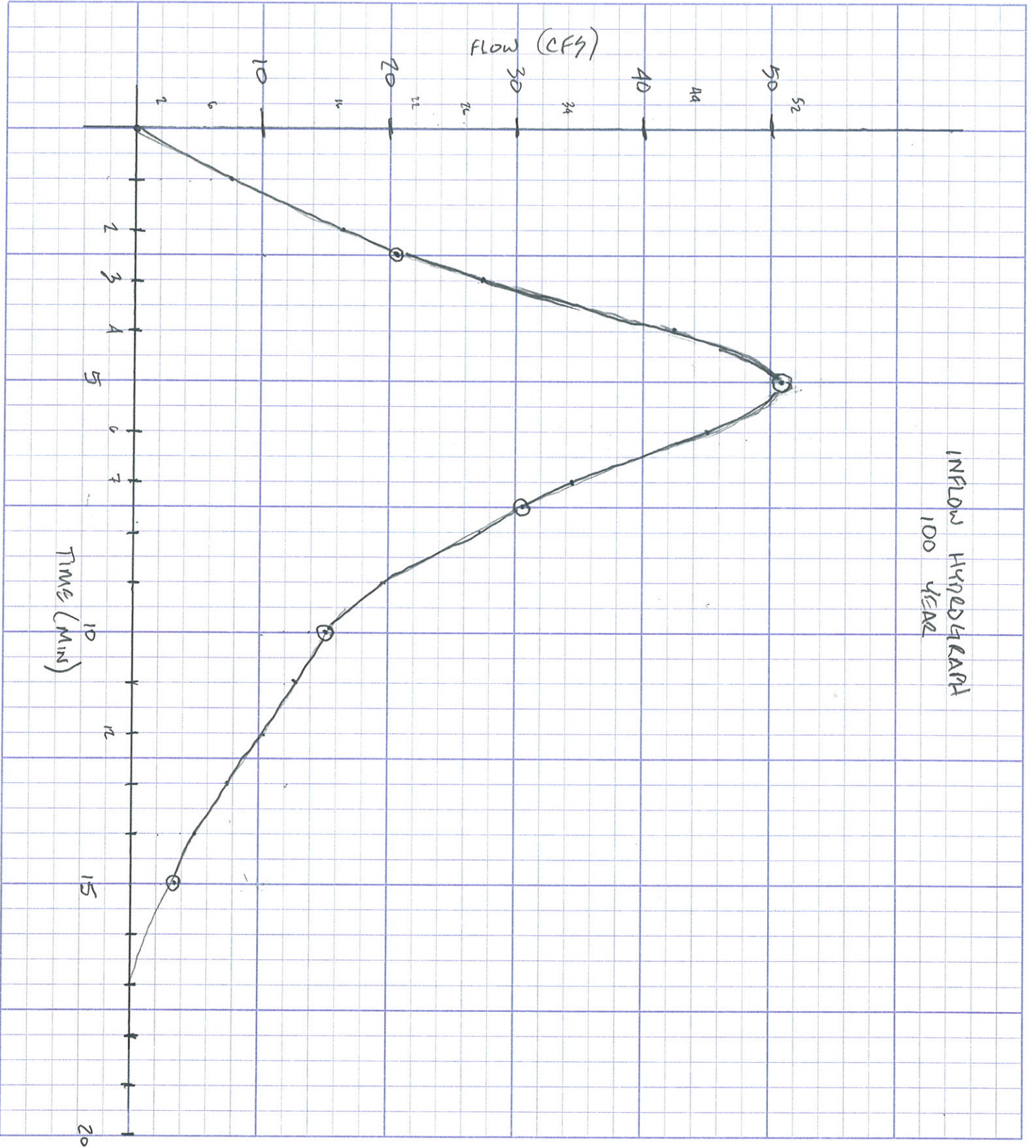


GOOD



CIVIL ENGINEERS LAND SURVEYORS

<u>ROUTE THE 100 YEAR STORM</u>	
<u>INFLOW</u>	<u>HYDROGRAPH - DIMENSIONLESS HYDROGRAPH</u>
<u>t / t_p</u>	<u>Q / Q_p</u>
0.5	0.4
1.0	1.0
1.5	0.6
2.0	0.3
3.0	0.07
<u>t_p = 5 min</u>	<u>Q_p = 51.1 (DEVELOPED FLOW)</u>
<u>t</u>	
2.5	20.44
5	51.1
7.5	30.66
10	15.33
15	3.60



CIVIL ENGINEERS LAND SURVEYORS



**THOMAS
ENGINEERING
COMPANY**

PREPARED BY _____

DATE _____

PROJECT DESCRIPTION _____

SHEETS _____

DATE _____

PROJECT DESCRIPTION _____



CIVIL ENGINEERS LAND SURVEYORS

100 YEAR ROUTE

TIME	INFLOW cfs	STORAGE	OUTFLOW	
0	0	0 $\Delta S = 0$	0	
1	7.8	0 $\Delta S = 468$	0	
2	16.3	468 $\Delta S = 978$	0	
3	27.5	1446 $\Delta S = 1560$	1.5	
4	42.5	3006 $\Delta S = 2250$	5	
5	51.1	5256 $\Delta S = 2466$	10	
6	45.0	7722 $\Delta S = 1950$	12.5	
7	34.5	9722 $\Delta S = 1200$	14.5	
8	27.3	10922 $\Delta S = 720$	15.3	
9	18.6	11642 $\Delta S = 180$	15.6	
10	15.33	11822 $\Delta S = -61$	16	MAX STORAGE NEEDED 11822 FT ³
11	13.0	11761 $\Delta S = -174$	15.9	WATER ELEVATION @ 16 cfs = 72.42
12	10.4	11587 $\Delta S = -312$	15.6	
13	7.5			100 YEAR FLOOD
14	5.0			
15				

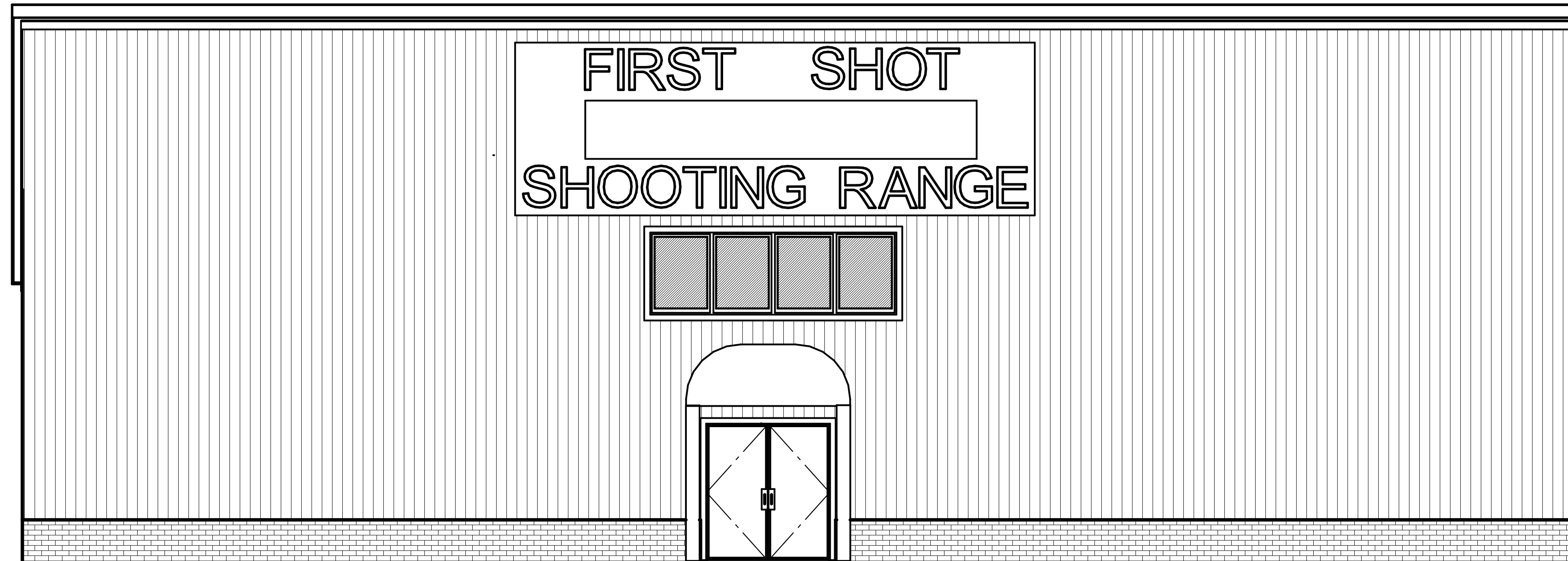


CIVIL ENGINEERS LAND SURVEYORS

CALCULATE PRE + POST DEVELOPMENT RUNOFFS	
$A = 5.81 \text{ AC.}$	$t_{CE} = 14 \text{ MIN}$ $t_{CD} = 5 \text{ MIN}$ $C_E = 0.42$ $C_D = 0.88$ $CA_E = 2.44$ $CA_D = 5.11$
PRE	POST
$Q_2 = 2.44(4.1) = 10.0$	$Q_2 = 5.11(5.8) = 29.6$
$Q_{10} = 2.44(5.5) = 13.4$	$Q_{10} = 5.11(7.6) = 38.8$
$Q_{25} = 2.44(6.4) = 15.6$	$Q_{25} = 5.11(8.5) = 43.4$
$Q_{50} = 2.44(7.0) = 17.1$	$Q_{50} = 5.11(9.3) = 47.5$
$Q_{100} = 2.44(8.6) = 19.5$	$Q_{100} = 5.11(10.0) = 51.1$

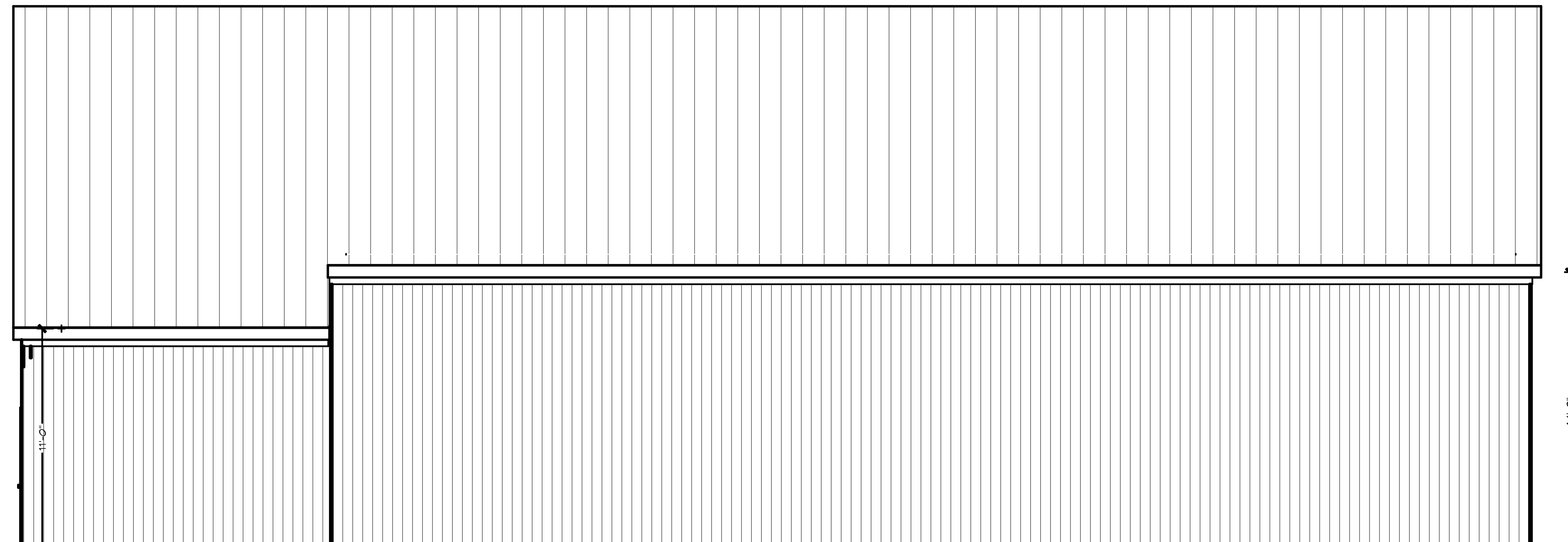
FRONT ELEVATION

SCALE: 3/16" = 1'



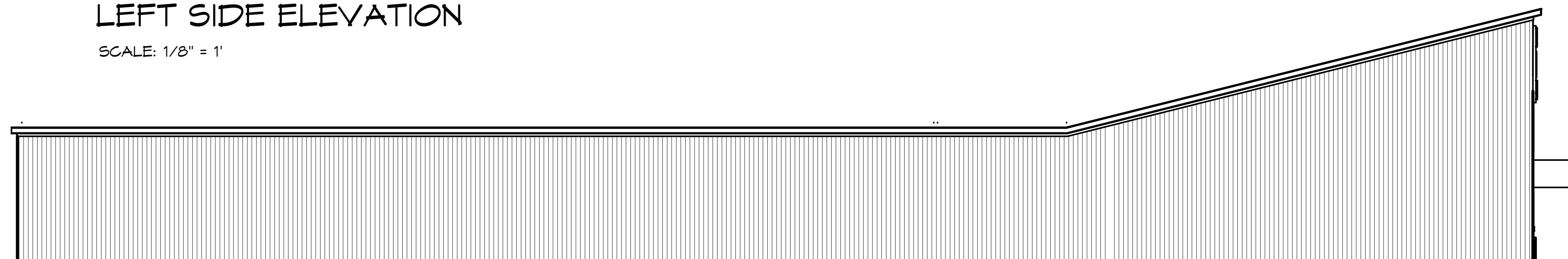
REAR ELEVATION

SCALE: 3/16" = 1'



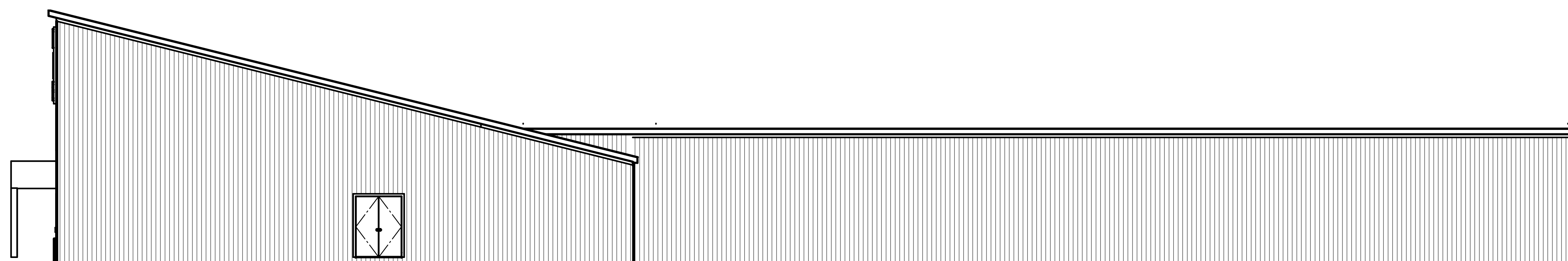
LEFT SIDE ELEVATION

SCALE: 1/8" = 1'



RIGHT SIDE ELEVATION

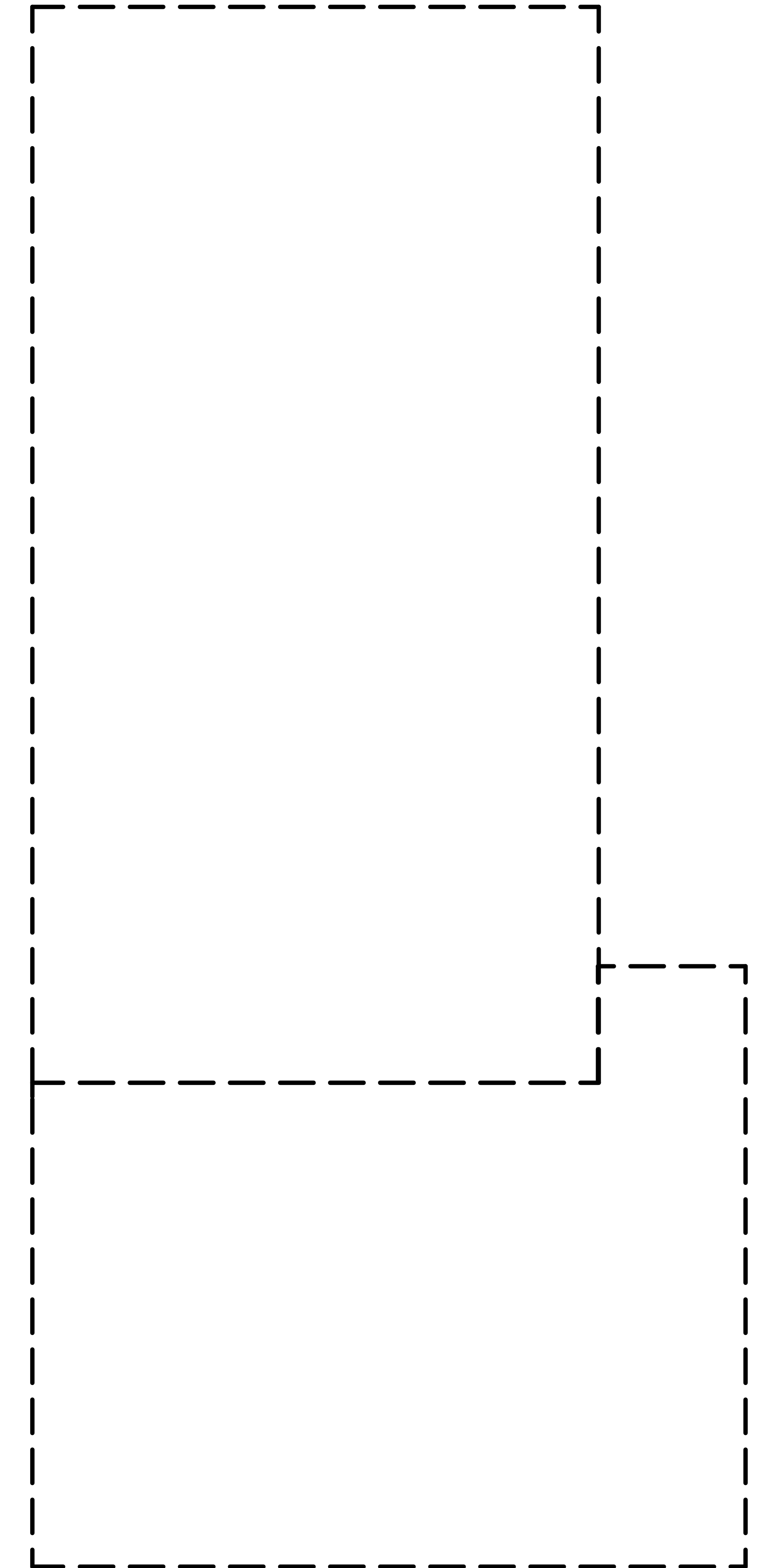
SCALE: 1/8" = 1'



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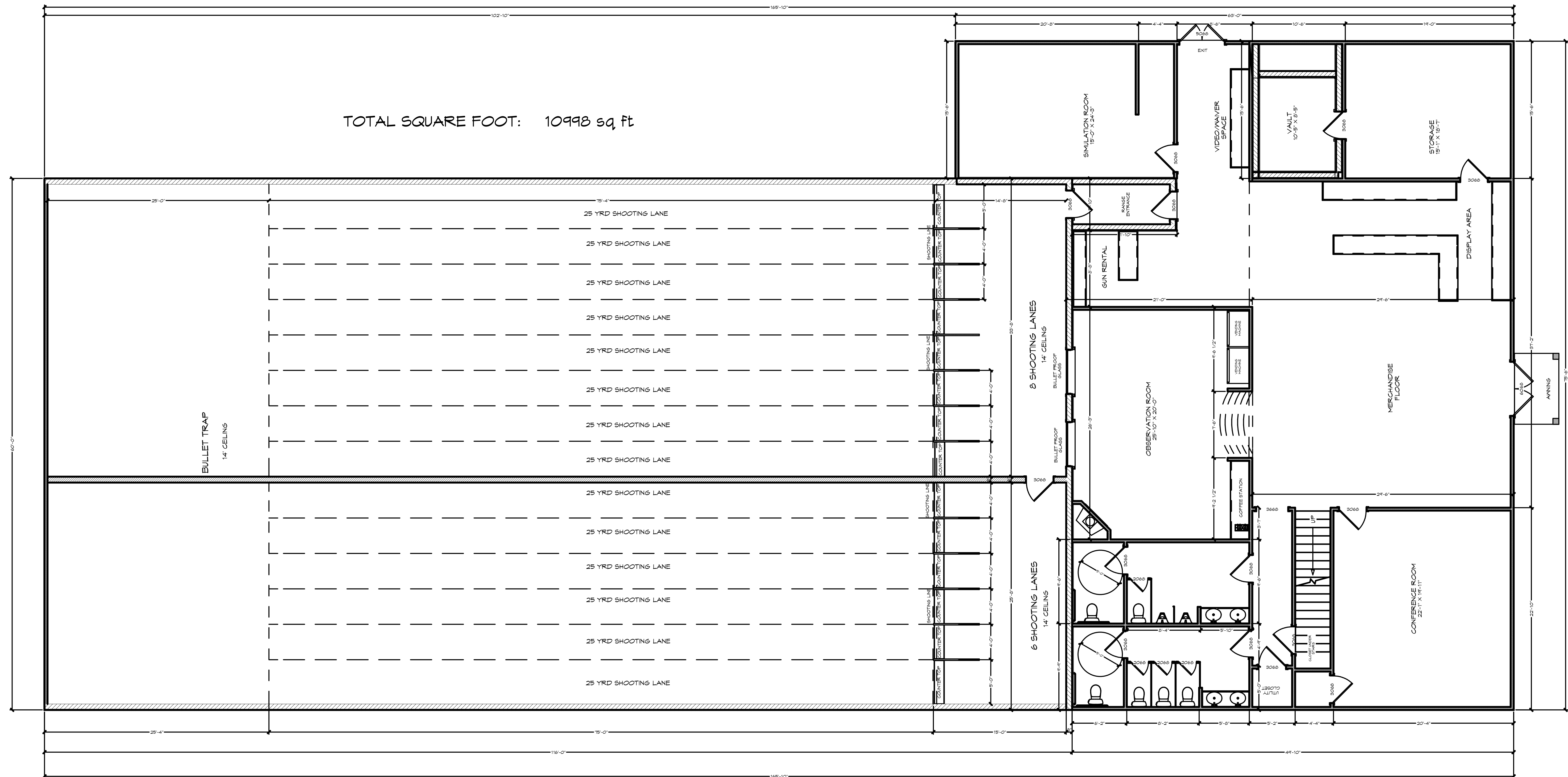
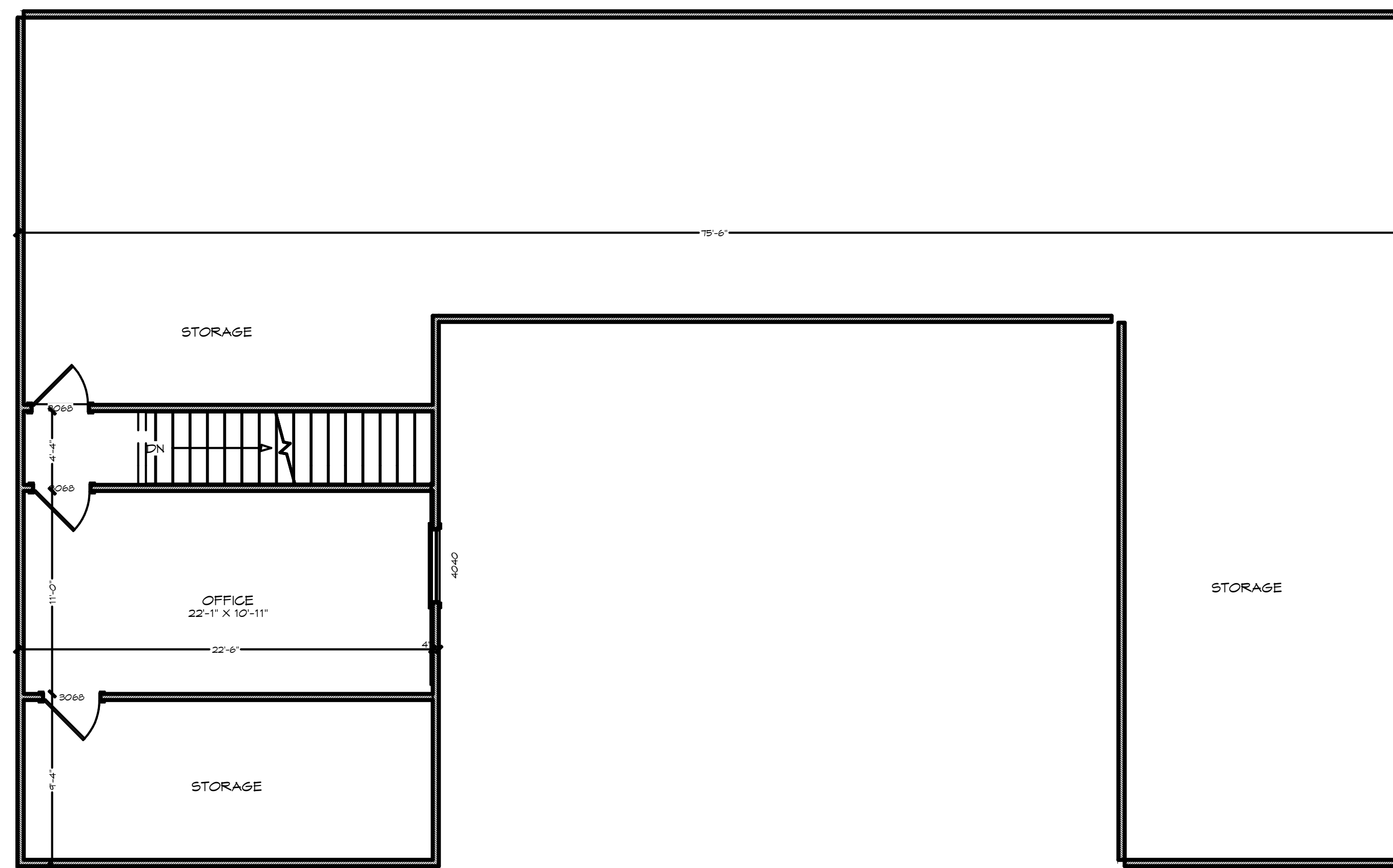
ROOF PLAN

SCALE: 1/8" = 1'

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LANDSCAPE NOTES

- CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT PRIOR TO INITIATING WORK ON THE SITE.
- CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES IN COORDINANCE WITH THE ARKANSAS UNDERGROUND UTILITIES DAMAGE PREVENTION ACT (H.B. 1468). PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CALL THE ARKANSAS ONE-CALL SYSTEM AT 1-800-482-8888 AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING TO ENSURE THAT ANY EXISTING UTILITIES CAN BE LOCATED.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. SEE SITE UTILITY PLAN AND VERIFY PLANT EXCAVATIONS WITH UTILITY PLANS AND INSTALLED FIELD LOCATIONS OF NEW UTILITIES.
- CONTRACTOR SHALL BEAR ALL RESPONSIBILITY AND COST OF REPAIR OR REPLACEMENT OF EXISTING UTILITIES, DAMAGE OR INTERRUPTED AS A RESULT OF THIS CONSTRUCTION PROJECT.
- CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND THE OWNER OF ANY DAMAGED OR INTERRUPTED UTILITIES IMMEDIATELY.
- SEE GRADING AND DRAINAGE PLAN FOR PROPOSED SLOPES, SWALES, BERMS, ETC. MAINTAIN PROPER FINISH GRADES IN ALL AREAS AS INDICATED.
- LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINE GRADING, REMOVAL OF HAZARDOUS DEBRIS AND ANY ADDITIONAL FILL REQUIRED TO PROVIDE MINIMUM TOPSOIL DEPTHS AND CREATE A SMOOTH CONDITION PRIOR TO PLANTING IN ALL AREAS.
- TOPSOIL SHALL BE FREE OF STONES, ROOTS AND CLUMPS AND ANY OTHER FOREIGN MATERIAL THAT IS NOT BEHIND FOR PLANT GROWTH. REF. SPECS.
- LANDSCAPE AND OPEN AREAS SHALL BE KEPT FREE OF TRASH, LITTER AND WEEDS AT ALL TIMES DURING CONSTRUCTION.
- IDENTIFICATION LABELS MUST BE ATTACHED TO ALL PLANT MATERIALS AND SHALL REMAIN IN PLACE UNTIL PLANT MATERIALS ARE FULLY ESTABLISHED. ALL TAGS AND LABELS SHALL BE REMOVED PRIOR TO REPORT ANY DISCREPANCIES FOUND IN THE PLANS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY AND REPORT ANY DISCREPANCIES FOUND ON THE SITE WHICH PROMPTS INSTALLATION AS SHOWN ON THESE DRAWINGS.
- THE NUMBER PLANTS OR INTERIRED COVERAGE AREAS SHOWN SHALL SUPERSEDE NOTED QUANTITIES.
- CONTRACTOR SHALL STAKE OUT ALL ORIGINAL TREE LOCATIONS IN FIELD USING COLORED FLAGS FOR EXCAVATION. L.A. RESERVES THE RIGHT TO ADJUST PLANTS TO EXACT LOCATION IN FIELD.
- ALL PLANT MATERIALS MUST BE APPROVED PRIOR TO INSTALLATION. SUBSTITUTIONS OF SIZE OR TYPE OF MATERIALS ARE NOT PERMITTED WITHOUT WRITTEN APPROVAL. PLANTS TO BE DESTROYED OR REMOVED PRIOR TO FINAL ACCEPTANCE.
- ALL PLANT MATERIALS SHALL BE MAINTAINED IN A HEALTHY AND GROWING CONDITION AND MUST BE PROTECTED FROM DAMAGE. PLANT MATERIALS SHALL BE MAINTAINED IN A HEALTHY AND GROWING CONDITION AND MUST BE PROTECTED FROM DAMAGE. PLANT MATERIALS SHALL BE MAINTAINED IN A HEALTHY AND GROWING CONDITION AND MUST BE PROTECTED FROM DAMAGE.
- COORDINATE ALL INSTALLATION ACTIVITIES WITH IRRIGATION WORK AND IMMEDIATELY REPAIR DAMAGES TO FINISH GRADES, SOD, AND PLANT MATERIALS UNTIL FINAL ACCEPTANCE OF THE WORK.

LANDSCAPE ORDINANCE INFORMATION		
C-2 ZONING	REQUIRED	PROVIDED
TREES: 1 EACH 1/2 ACRE OR FRACTION	134 TREES	3 TREES
EVERGREENS: 1/2,000 SQ. FT.	12,000 SQ. FT.	34 EVERGREEN SHRUBS

TREE LIST

SYMBOL	COMMON BOTANICAL NAME	SIZE	REMARKS
EA	ELM ALBA	3" MIN. CAL.	TREES WITH POSITIVE UPRIGHT FORM AND SYMMETRICAL WELLS
EA	ELM ALBA	14-18" DBH	BRANCHED CANOPIES; NO BRANCHES BELOW 5.0' FROM GROUND.
OW	OAK, WILLOW	3" MIN. CAL.	TREES WITH POSITIVE UPRIGHT FORM AND SYMMETRICAL WELLS
OW	QUERCUS PHELLOS	14-18" DBH	BRANCHED CANOPIES; NO BRANCHES BELOW 4.0' FROM GROUND.

ALL TREE CALIPERS ARE TO BE MEASURED 12 INCHES ABOVE GRADE TO MEET MINIMUM SIZING REQUIREMENTS.

SHRUB LIST

SYMBOL	COMMON BOTANICAL NAME	SIZE	REMARKS
LPH	LOROPETALUM PIERREI DUMANO	18" MIN. HT.	SPACE PLANTS 3x3' O.C. IN CLUSTERS AND ROWS. FILL
LPH	LOROPETALUM CHINENSIS	18"-27" SP.	WELL BRANCHED SHRUB SELECTIONS WITH UNIFORM SHAPE.

GROUND COVER LIST

SYMBOL	COMMON BOTANICAL NAME	SIZE	REMARKS
LV	LIRIODIE, VASECATA	6" POTS	SPACE PLANTS 18" O.C. IN GROUND COVER AREAS
LV	LIRIODIE, VASECATA	VAR. SHINCHU	

TURF MATERIALS LIST

SYMBOL	COMMON BOTANICAL NAME	SIZE	REMARKS
SOD	COMMON BOUTANICAL NAME	SO. YD.	SQUID SOD ALL INDICATED AREAS WITH CLOSE JUNT JOINTS.
SOD	COMMON BOUTANICAL NAME	VAR. TINY	

OTHER MATERIALS

ITEM	REMARKS
STEEL EDGING (S/E)	SEE PLAN FOR LOCATIONS. DO NOT INSTALL ALONG BACK OF CURBS OR SIDEWALKS. USE PRE-FABRICATED COMMERCIAL GRADE STEEL EDGING PRODUCT. 3/16" X 4" SIZE STEEL BANDS WITH DARK GREEN OR BLACK PAINT. RESISTANT PAINTED FINISH AND HITS, STAKES & ACCESSORIES.
MULCH	SHREDDED HARDWOOD BARK MULCH. 3 INCH MINIMUM LAYER DEPTH IN ALL GROUND COVER AND ANNUAL BED AREAS. REMOVE ALL OTHER DEBRIS.
WEED BARRIER	INSTALL COMMERCIAL GRADE WEED BARRIER FABRIC UNDER MULCH IN SHRUB BEDS AND GRAVEL SURFACED AREAS (ONLY IN THE AREAS WITH PLANTS ON THE SHRUBS AND ORNAMENTAL GRASSES LIST NOT IN THE GROUND COVER OR TUCK ALL EDGES 6 INCHES MINIMUM INTO SOIL AT CURBS AND STEEL EDGING.
TOPSOIL	SEE SPECIFICATIONS FOR SOIL PREPARATION FOR REQUIREMENTS REGARDING TOPSOIL AMENDMENTS. SOIL PREPARATION AND SOIL CONDITIONING. FOR PRICING PURPOSES ASSUME THE FOLLOWING SOIL AMENDMENTS PER CUBIC YARD: 85% BY VOLUME TOPSOIL 15% BY VOLUME AMMONIUM SULFATE 1 POUNDS TRIPLE SUPER PHOSPHATE 1 POUND ACROLIC TOPSOIL Gypsum 1 POUND POTASSIUM SULFATE TOPSOIL DEPTH FOR SEED AREAS = 2 INCHES

SODDING OF DISTURBED AREAS

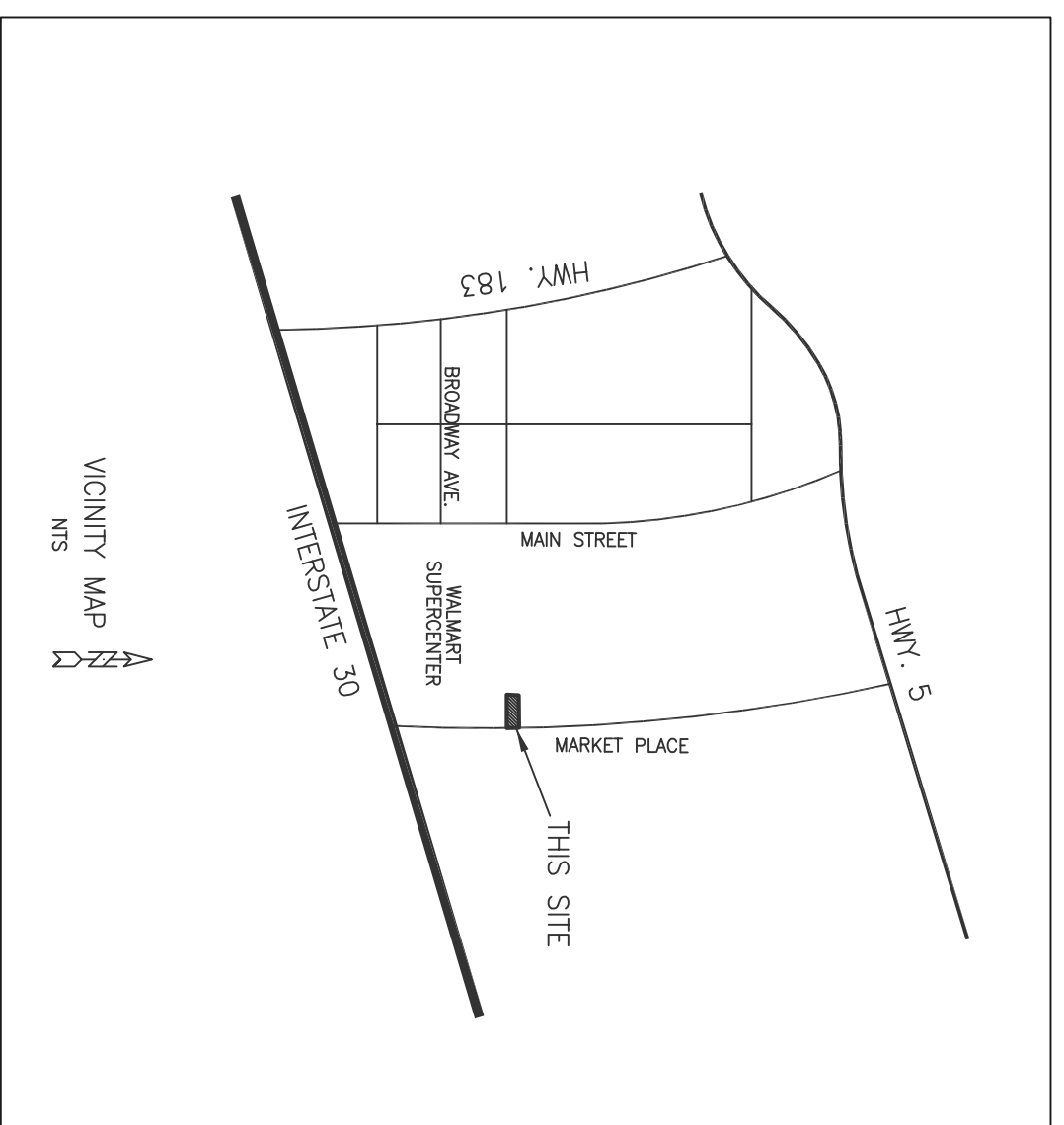
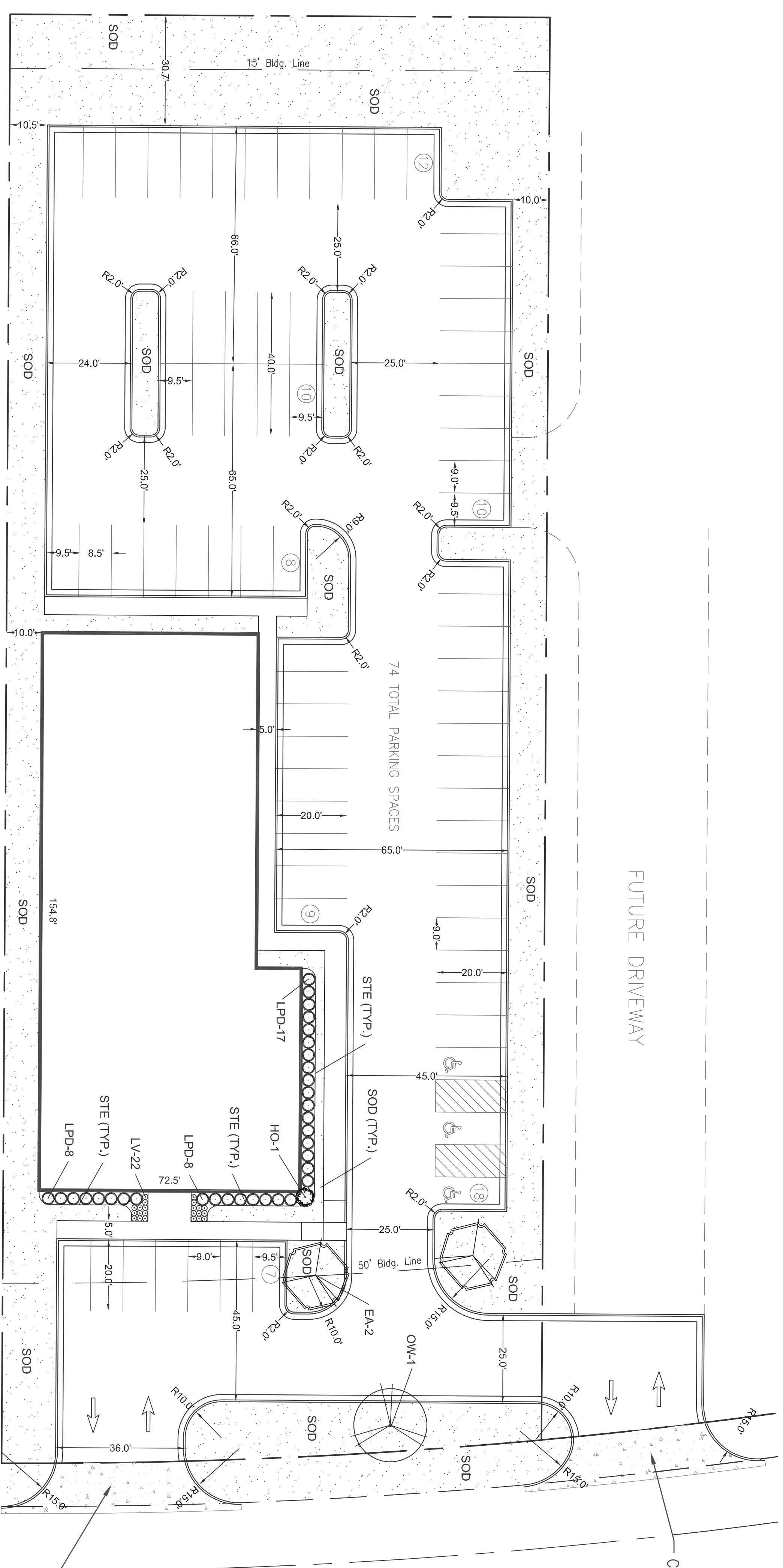
AREAS & LIMITS OF SODDING ARE INDICATED BASED ON ANTICIPATED DISTURBANCE BY GRADING OPERATIONS. CONTRACTOR TO PROVIDE ADDITIONAL SODDING IN ANY OTHER AREAS DISTURBED BY WORK UNDER THIS CONTRACT. ALSO EXCAVATE & REMOVE ANY REMAINING TURF & SOIL TO A 4" MINIMUM DEPTH WITHIN NEW SOD AREAS WHERE NECESSARY. HAND EXCAVATION REQUIRED WITHIN DRIP LINES OF TREE AREAS. DO NOT DAMAGE EXISTING ROOTS.

MAINTENANCE & WARRANTY

CONTRACTOR TO PROVIDE FULL MAINTENANCE OF INSTALLED LANDSCAPE & IRRIGATION UNTIL DATE OF FINAL ACCEPTANCE. ALSO PROVIDE ONE YEAR WARRANTY FOR ALL LANDSCAPE & IRRIGATION WORK FROM THE DATE OF FINAL ACCEPTANCE.

IRRIGATION SYSTEM REQUIRED

CONTRACTOR TO PROVIDE AUTOMATIC IRRIGATION SYSTEM FOR ALL NEW LANDSCAPE AREAS SHOWN ON PLAN, ACCORDING TO "LANDSCAPE IRRIGATION SYSTEM PERFORMANCE SPECIFICATION" SYSTEM WILL REQUIRE NO FIELD MODIFICATION. CONTRACTOR TO PROVIDE WITH OWNER, GENERAL AND ELECTRICAL CONTRACTOR. IRRIGATION SLEEVING AND WATER METERS TO BE PROVIDED BY GENERAL CONTRACTOR.



Developer:
 FS Properties, LLC
 3308 Brady Cliff Road
 Benton, AR 72011
 Contact: Tom Pezeshk
 Phone: 501-329-0738

NOTE: STORMWATER DETENTION HAS BEEN PROVIDED FOR THE OVERALL DEVELOPMENT.

LEGEND

⊗	water valve
⊕	fire hydrant
⊖	water meter
⊙	gas meter
⊚	buried gas meter
⊛	power pole
⊜	typ. wire
⊝	light pole
⊞	ground light
⊟	bolard pole
⊠	sewer or drain clean-outs
⊡	telephone riser
⊢	telephone sign
⊣	concrete riser
⊤	junction box-drainage
⊥	curb inlet-drainage
⊦	grate inlet-drainage
⊧	reinforced concrete pipe
⊨	corrugated metal pipe
⊩	sign
⊪	handicap parking
⊫	handicap ramp
⊬	concrete
⊭	fence
⊮	overhead power
⊯	(ug) underground electric
⊰	(ug) underground gas
⊱	(ug) underground fiber optic
⊲	(ug) underground telephone
⊳	(ug) underground water
⊴	(ug) underground sewer

LEGAL DESCRIPTION
 A PART OF THE NW1/4 OF SECTION 22, T-1-S, R-14-W, SAINE COUNTY, ARKANSAS, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
 COMMENCING AT THE SOUTHWEST CORNER OF THE SE1/4 NW1/4 OF SAID SECTION 22, THENCE N00°19'42"E, A DISTANCE OF 311.79 FEET TO THE NORTHERLY RIGHT OF WAY LINE OF U.S. INTERSTATE HIGHWAY NO. 30; THENCE N57°06'32"E, ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 526.07 FEET; THENCE N77°53'28"W, A DISTANCE OF 45.18 FEET; THENCE N32°53'21"W, A DISTANCE OF 104.44 FEET; THENCE ALONG A 340.00 FOOT RADIUS CURVE TO THE RIGHT, HAVING A CHORD BEARING AND DISTANCE OF N16°16'27"W, 194.47 FEET; THENCE N00°20'36"E, A DISTANCE OF 642.34 FEET; THENCE N89°39'24"W, A DISTANCE OF 60.00 FEET TO THE NORTHEAST CORNER OF TRACT A, WAL-MART SUPERCENTER, A SUBDIVISION IN SAINE COUNTY, ARKANSAS, SAID POINT ALSO BEING THE POINT OF BEGINNING; THENCE CONTINUE N89°39'24"W, ALONG THE NORTH LINE OF SAID TRACT A, A DISTANCE OF 402.45 FEET; THENCE N00°20'36"E, A DISTANCE OF 150.00 FEET; THENCE S89°39'24"E, A DISTANCE OF 385.11 FEET; THENCE ALONG THE ARC OF A 1556.45 FOOT RADIUS CURVE TO THE RIGHT, HAVING A CHORD BEARING AND DISTANCE OF S02°27'29"E, 150.18 FEET TO THE POINT OF BEGINNING.

WHITE-DATERS & ASSOCIATES, INC.
 CIVIL ENGINEERING, LAND PLANNING & DEVELOPMENT, SURVEYING
 24 RAHINDO CIRCLE, LITTLE ROCK, ARKANSAS 72223

Survey By: _____ Drawn By: _____ Checked By: _____ Approved By: _____

REGISTERED PROFESSIONAL ENGINEER
 ARKANSAS
 No. 5038

REGISTERED PROFESSIONAL ENGINEER
 ARKANSAS
 No. 5038

CERTIFICATE OF AUTHORIZATION
 WHITE-DATERS & ASSOCIATES, INC.
 No. 538
 ENGINEER - CIVIL

REGISTERED PROFESSIONAL LAND SURVEYOR
 STATE OF ARKANSAS
 No. 1542
 No. 5184

Scale 1" = 20 ft

SITE PLAN

FIRST SHOT LLC

BRYANT, ARKANSAS

Revised: _____

Date: 11-01-17

Scale: 1"=20'

Sheet: 001 of _____

Job No. 17-543J

FS Properties LLC

3308 Bauxite Cutoff Road

Bauxite, AR 72011

501-529-0726

11/06/2017

Bryant Planning Commission,

I respectfully request permission to develop a small parcel of land and build a state of the art indoor shooting range. This building will also have different areas to purchase firearms, rent firearms to be used at the range, training facilities, display area as well as a lounge area.

All city, state and federal codes, rules and regulations will be followed in building and operating this new business.

We anticipate creating 15-20 new jobs and revenues in excess of 3 million dollars in the first year and increasing annually thereafter.

Please feel free to contact me with any questions you may have.

Respectfully yours,



Hamid Pezeshk

Bryant Planning Commission

LARGE SCALE DEVELOPMENT COMMERCIAL BUILDING CHECKLIST

CITY OF BRYANT
210 SW 3RD STREET
BRYANT, AR 72022
501-943-0309

PC MEETING DATE: SECOND MONDAY OF EACH MONTH
TIME: 6:00 P.M.
PLACE: COURTROOM - BRYANT OFFICE COMPLEX
AGENDA DEADLINE: 5:00 P.M. THREE WEEKS PRIOR TO THE REGULARLY SCHEDULED MEETING DATE

REQUIREMENTS FOR SUBMISSION

LETTER TO PLANNING COMMISSION STATING YOUR REQUEST
COMPLETED CHECKLIST (SUBDIVISION OR BUILDING)
ADA/ABA FORM COMPLETED
TWO FULL SETS OF BUILDING PLANS
20 FOLDED COPIES OF SITE PLAN (MINIMUM SIZE 17" X 34") THAT INCLUDES THE FOLLOWING:
VICINITY MAP - LEGAL DESCRIPTION - LANDSCAPING PLAN
20 FOLDED COPIES OF FLOOR PLAN
20 COPIES OF FRONT AND REAR BUILDING ELEVATIONS
AN IBM COMPATIBLE DISKETTE IN PDF FORMAT
COPY OF ADEQ STORMWATER POLLUTION PREVENTION PLAN FOR PROPERTY PARCEL CONTAINING ONE ACRE OR LARGER.
COPY OF STORMWATER DETENTION APPROVAL BY ENGINEER
\$250.00 FOR STORMWATER DETENTION AND DRAINAGE PLAN REVIEW

ALL REQUIREMENTS LISTED ABOVE MUST BE COMPLETED AND ATTACHED BEFORE SUBMITTING APPLICATION TO BE PLACED ON THE PLANNING COMMISSION AGENDA.

NOTE: WHEN MAKING CHANGES TO AN APPROVED SITE PLAN, A REVISED SITE PLAN MUST BE SUBMITTED TO THE BRYANT PLANNING COMMISSION FOR APPROVAL. THIS MUST BE DONE PRIOR TO IMPLEMENTATION. FAILURE TO COMPLY WILL RESULT IN PENALTIES/FINES BEING IMPOSED IN ACCORDANCE WITH CITY ORDINANCES.

I HAVE COMPLIED WITH THE REQUIREMENTS LISTED ABOVE AND HAVE CHECKED ALL OF THE BOXES ON THE CHECKLIST WHICH APPLY TO THIS PROJECT SUBMITTAL.

SIGNATURE

DATE

City of Bryant Commercial Building Checklist

Name of Development _____

Site Location _____ Current zoning _____

Owner Hamid Pezeshk Phone 501-529-0726

I. BASIC INFORMATION NEEDED ON THE SITE PLAN

- ▲ 1. Name of Development
- ▲ 2. Current zoning
- ▲ 3. Name and Address of owner of Record
- ▲ 4. Name and address of the architect, landscape architect, engineer, surveyor, or other person involved in the preparation of the plan
- ▲ 5. Date of preparation of the plan
- ▲ 6. Vicinity map locating streets, highways, section lines, railroad, schools, & parks within ½ mile
- ▲ 7. Legal description of the property with exact boundary lines
- ▲ 8. North arrow & Scale
- ▲ 9. Identification of any land areas within the 100 year floodplain and within the 100 year floodway
- ▲ 10. Lot area in square feet
- ▲ 11. Show scale (not less than 1" = 100') (paper size minimum 17" X 34")
- ▲ 12. Existing streams, drainage channels, and other bodies of water
- ▲ 13. Drainage easements for stormwater run-off and detention shown & labeled
- ▲ 14. Location and name of existing streets
- ▲ 15. Show source of water supply
- ▲ 16. Show location of waste water connection to municipal system & sanitary sewer layout
- ▲ 17. Fire Hydrant placement
- ▲ 18. Proposed location of buildings and other structures, parking areas, drives, loading areas, service areas, alleys, walks, screening, and public streets
- ▲ 19. Sufficient dimensions to indicate relationship between buildings, property lines, parking areas and other elements of the plan
- ▲ 20. Extent and character of proposed landscaping. Common and/or Botanical plant names and sizes of new vegetation must be clearly indicated.
- ▲ 21. Location, massing and pattern of existing vegetation to be retained
- ▲ 22. Existing structures on the site
- ▲ 23. Pedestrian and vehicular access points, sidewalks, crosswalks, etc.
- ▲ 24. Typical building elevations depicting the style, size and exterior construction materials of the buildings proposed. Where several building types are proposed on the plan, such as apartments and commercial buildings, a separate sketch shall be prepared for each type. The elevations shall be drawn at a minimum scale of 1/16" to a foot and must show adjoining context.
- ▲ 25. Any variance approvals

II ADDITIONAL INFORMATION NEEDED, BUT NOT ON THE SITE PLAN

COMMERCIAL BUILDING WORKSHEET

	Yes	No
Site is compatible with Master Street Plan	✓	
Proposed improvement is within building line setbacks Front <u>50</u> ft. Side <u>10</u> ft. CNR Side <u>N/A</u> ft. Back <u>15</u> ft.		
Parking requirements can be satisfied Floor Space <u>15,200</u> sq.ft. divided by 300 = <u>40</u> (no. of parking spaces required)	✓	
Improvement is outside 100 year flood plain (if answer is no - Provide 404 Permit for site)	✓	
Lowest building floor level and all mechanical equipment are above FEMA 100 year flood elevation	✓	
Will there be a dumpster located on the site?	✓	
Will there be a construction site office?		✓
Have you made "One Call"?		✓
Structure and site complies with ADA (Americans with Disability Act) and ABA (Architectural Barriers Act) Accessibility Guidelines	✓	
Design complies with Arkansas Plumbing Code and National Electric Code requirements	✓	
Foundation and structure meet earthquake requirements for Zone 1.	✓	
Structure meets Arkansas Energy Code for specified use.	✓	
Complies with Arkansas Fire Prevention Code	✓	
Complies with International Code Council regulations	✓	
Will a Site Clearance Permit be required? (City Ordinance 2002-03) <u>Properly Previously Cleared</u>		
Are you granted any variances by the Board of Adjustment?		✓
If you have been granted a variance please explain in detail:		

III. LANDSCAPING COMPLIANCE WITH REQUIREMENTS

	YES	NO
No planting within 5 feet of a fire hydrant	✓	_____
Spacing will be 40' between trees	✓	_____
Tree must be a minimum 3" in diameter at the base and 12' + tall	✓	_____
Existing trees meeting the minimum size can be counted to meet above criteria	✓	_____
No trees can be planted within 30 feet of a property corner or driveway	✓	_____
Shrubs along street right-of-way lines cannot exceed 30 inches in height	✓	_____

IV. SITE COVERAGE COMPLIANCE WITH REQUIREMENTS

(FOR YOUR CONVENIENCE WE HAVE LISTED THE THREE COMMERCIAL ZONING SITE COVERAGE REQUIREMENTS - CHOOSE THE ZONING FOR THIS PROJECT AND COMPLETE ONLY THAT SECTION)

	<u>YES</u>	<u>NO</u>
1. C-1 Zoning - Neighborhood Commercial		
Lot area: minimum of 2,500 square feet; maximum 16,000 square feet	_____	_____
Front Yard: none required	_____	_____
Side Yard: minimum of 5 feet each side	_____	_____
Rear Yard: minimum of 55 feet	_____	_____
Maximum lot coverage of 70% of the total area of the site for all principal, accessory buildings, parking lots, sidewalks, private streets, or drives.	_____	_____
Parking: one space per each 200 sq. ft. of commercial use	_____	_____
Loading areas: physically separated from all streets with 10 ft grassy area	_____	_____
When abuts a residential district, a minimum 6' high wood, rock, or masonry fence is required with a landscape screen	_____	_____
 2. C-2 Zoning - Lots fronting along roadways designated as Interstate 30 and frontage roads, State Highway 5 and 183		
Front Yard: not less than 50 feet from front property line	_____	_____
Side Yard: not required, except where they abut a street or a residential lot line then a minimum of 25 feet is required	_____	_____
Rear Yard: minimum of 15 feet, except where they abut residential area then a minimum of 55 feet is required	_____	_____
A maximum lot coverage of 35% of the total area of the site for all principal and accessory buildings	_____	_____
Parking: one space per each 300 sq. ft. of occupied space	_____	_____
When abuts a residential district, a minimum 6' high wood, rock, or masonry fence is required with a landscape screen	_____	_____
 3. C-2 Zoning - Lots fronting along roadways designated as interior local.		
Front Yard: none required	_____	_____
Side Yard: not required, except where they abut a street or a residential lot line then a minimum of 25 percent of lot dimension	_____	_____
Rear Yard: minimum of 15 feet, except where they abut residential area then a minimum of 55 feet is required	_____	_____
A maximum lot coverage of 85% of the total area of the site for all principal, accessory buildings and parking	_____	_____
Parking: one space per each 300 sq. ft. of occupied space	_____✓_____	_____
When abuts a residential district, a minimum 6' high wood, rock, or masonry fence is required with a landscape screen	_____	_____

V. SITE PLAN ATTACHMENTS

(APPLICATION WILL NOT BE ACCEPTED UNTIL ALL ATTACHMENT REQUIREMENTS ARE MET)

- ▲ 26. Letter to Planning Commission stating your request
- ▲ 27. Completed Checklist
- ▲ 28. Completed ADA/ABA Form
- ▲ 29. Two full sets of Building Plans
- ▲ 30. 20 copies of Site Plan (folded to no larger than 8 ½ X 14 size) that includes vicinity map and landscaping plan (minimum size 17" X 34" paper)
- ▲ 31. 20 copies of Landscaping Plan (folded to no larger than 8 ½ X 14 size)
- ▲ 32. 20 copies of building floor plan (folded to no larger than 8 ½ X 14 size)
- ▲ 33. Copy of Stormwater Detention approval
- ▲ 34. Copy of ADEQ Stormwater Pollution Prevention Plan for property containing one acre or larger.
- ▲ 35. IBM compatible diskette or CD with data in PDF format.
- ▲ 36. Receipt for \$250.00 for Stormwater Detention and Drainage Plan review

I CERTIFY that the design of _____ in the City of Bryant, Arkansas complies with the above regulations, laws and codes.

Hamid Rezeki

Owner

3308 Brauxite Cutoff Road

Mailing Address

Brauxite AR 72011

City

Joe White

Engineer/Architect

501-580-5696

Phone #

Date

CITY USE

Action Taken:

Special Conditions:

Permit Issued: Date _____ Sq.Ft. _____ Amount \$ _____

Construction Completed Certified For Occupancy: Date: _____

Inspector: _____

Permit No. _____

BUILDING PERMIT

ADA/ABA ACCESSIBILITY STANDARDS

The *Americans with Disability Act* and *Architectural Barriers Act* Accessibility Guidelines were prepared by the U.S. Access Board and mandated by the U. S. Department of Justice regulations implementing Title III as the official ADA/ABA accessibility guidelines. **All new construction, remodeling, and modifications must conform to these building standards** for places of public accommodation and commercial facilities. Residential is exempt.

The ADA/ABA accessibility guidelines contain general design standards for building and site elements, such as accessible entrances and routes, ramps, parking spaces, stairs, elevators, restrooms, signage, etc. Also included are specific standards for restaurants, medical care facilities, libraries and transportation facilities and vehicles, and places of lodging.

The guidelines also include "scoping" requirements that outline the necessary features or appropriate quantity for achieving ready access. For example, at least 50 percent of all public entrances to buildings must be accessible with an accessible path of travel. In public restrooms, at least one bathroom stall must be accessible unless there are more than six stalls, in which case the number increases.

I hereby certify that I have read and examined the above notice and will comply with all guidelines of the ADA Accessibility Guidelines. I further understand that a copy of the ADA/ABA Regulations are available for inspection during business hours of City Hall or I may obtain a copy by writing:

The Access Board
1331 F Street, NW, Suite 1000
Washington, DC 20004-1111
(202) 272-0080 (v) (202) 272-0082 (TTY) (202) 272-0081 (fax)
(800) 872-2253 (v) (800) 993-2822 (TTY)
email: info@access-board.gov

Signature of Contractor
or Authorized Agent _____ Date _____

Signature of Owner
(if owner-builder)  _____ Date 10/23/17

Application of Permit Approved: _____ Date _____
Commission - Chairman

Bryant Water & Sewer Department

GREASE TRAP STANDARDS

The City of Bryant requires all commercial buildings comply with plumbing codes found in the Arkansas State Plumbing Code, Latest Edition. All new construction, remodeling, and modifications must conform to these plumbing standards for places of public accommodation and commercial facilities. These guidelines contain general design standards for construction and site elements relating to plumbing.

As of 7/27/04, the Bryant Sewer & Water Commission requires stringent specification standards for commercial or public businesses that involve any food preparation on the premise. The new standard requires calculations, and associated data to be submitted to the Bryant Water Utilities General Manager concurrent with the proposed building plumbing plans along with a grease trap calculation form. Building Permits will not be issued until this form has been received and approved by the Bryant Water Utilities General Manager.

All new buildings or strip centers containing sections designated for commercial enterprise are encouraged to provide a stub-out for a separate waste line for future grease interceptor installation. The owner of a new strip center shall consider suitable physical property space and sewer gradient that will be conducive for the installation of an exterior, in-ground grease interceptor(s) for any flex space contained within the strip center. Physical Property Restrictions and sewer gradient shall not be a defense for failure to install an exterior, in-ground grease interceptor.

I hereby certify that I have read and examined the above notice and will comply with all guidelines of the City of Bryant Water & Sewer Department. I further understand that copies of the Grease Interceptor Design and Structural Criteria regulations will be available from the Bryant Water/Wastewater Plant (501-847-8083) during business hours.

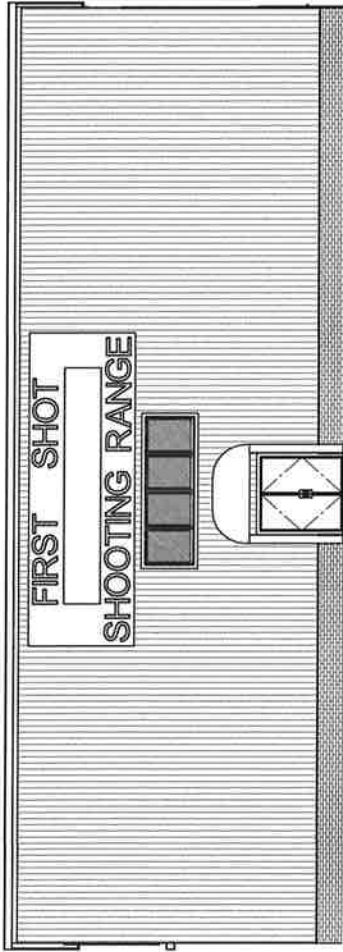
Project Name _____

Signature of Contractor
or Authorized Agent _____ Date _____

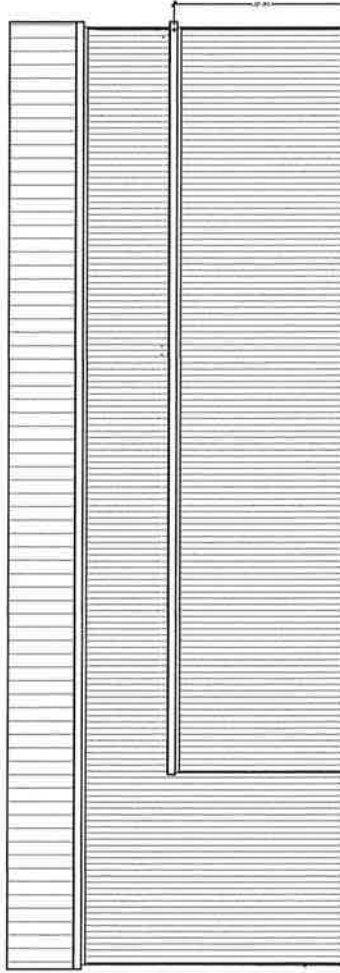
Signature of Owner
(if owner-builder)  _____ Date 10/23/17

Calculations
Approved: _____ Date _____
Bryant Water Utilities General Manager

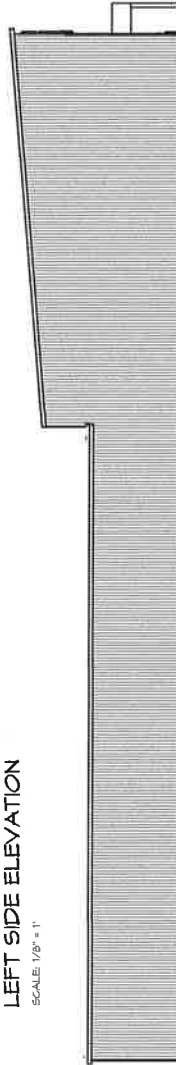
FRONT ELEVATION
SCALE: 3/16" = 1'



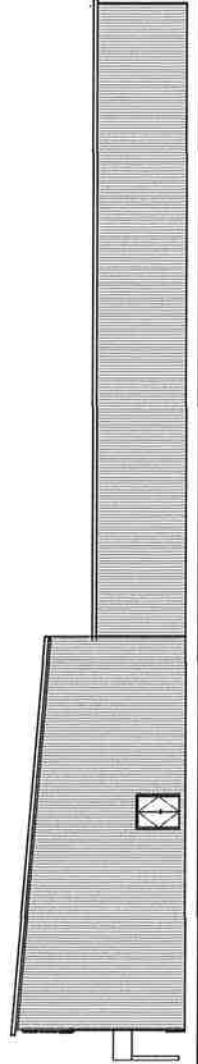
REAR ELEVATION
SCALE: 3/16" = 1'



LEFT SIDE ELEVATION
SCALE: 1/8" = 1'

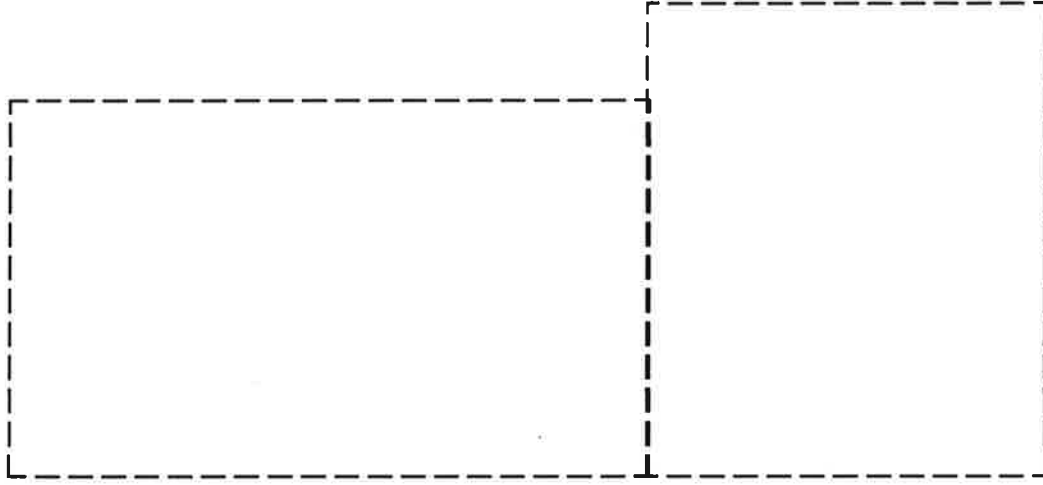


RIGHT SIDE ELEVATION
SCALE: 1/8" = 1'



TIM LANDRETH HOME DESIGNS, LLC
WWW.TIMLANDRETH.COM
RESIDENTIAL DESIGN & DRAFTING
CUSTOM PLAN SERVICE
(501) 311-5090

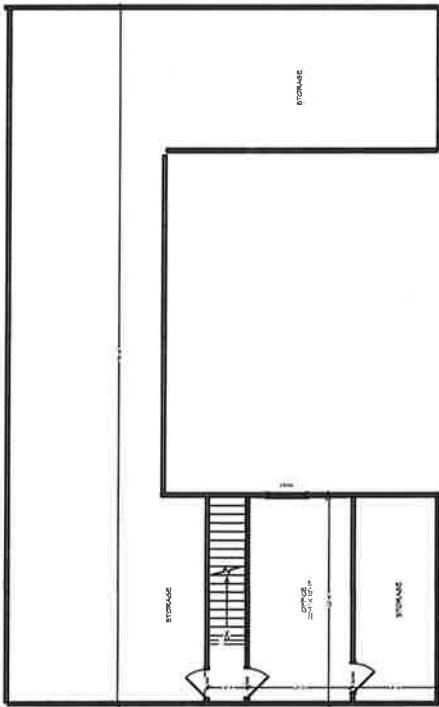
COMPANY / ARCHITECTAL PROJECTS
THE ARCHITECT, HOME DESIGNS, RESERVES ITS
COMMON LAW COPYRIGHT AND OTHER
RIGHTS IN THIS DOCUMENT. ANY REUSE
WITHOUT THE WRITTEN CONSENT OF THE
ARCHITECT SHALL BE PROHIBITED. THE
ARCHITECT SHALL NOT BE RESPONSIBLE FOR
CONTRACT A SINGLE PART. THE PLANS MAY NOT
BE REPRODUCED OR TRANSMITTED IN ANY
MANNER WITHOUT THE WRITTEN CONSENT OF THE
ARCHITECT HOME DESIGNS.



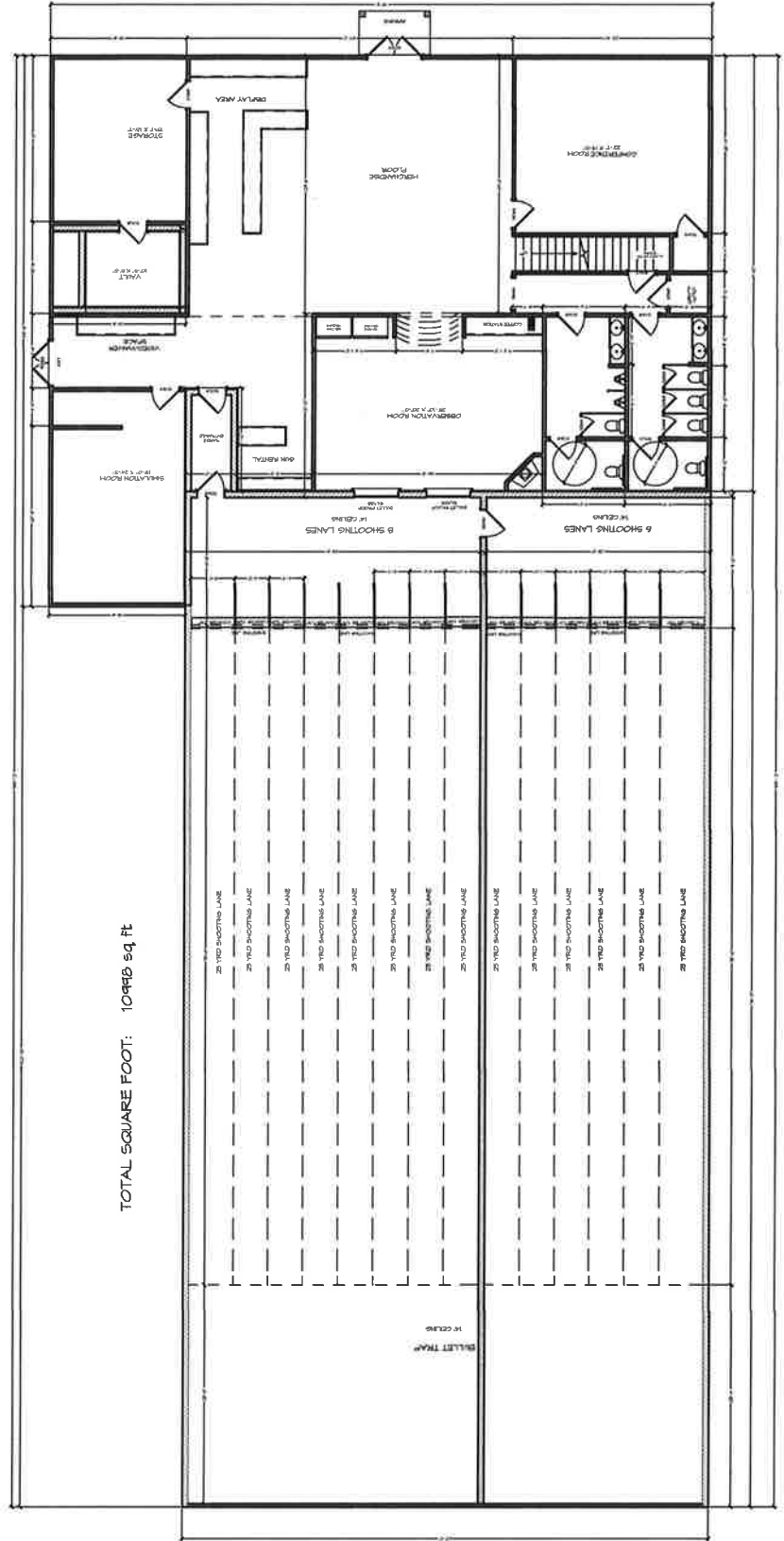
ROOF PLAN
SCALE: 1/8" = 1'

TIM LANDRETH HOME DESIGNS, LLC
 WWW.TIMLANDRETHHD.COM
 RESIDENTIAL DESIGN & DRAFTING
 CUSTOM PLAN SERVICE

COPYRIGHT / INTELLECTUAL PROPERTY
 TIM LANDRETH HOME DESIGNS, LLC
 ALL RIGHTS RESERVED. NO PART OF THIS PLAN
 OR THE INFORMATION CONTAINED HEREIN MAY BE
 REPRODUCED OR TRANSMITTED IN ANY FORM OR
 BY ANY MEANS, ELECTRONIC OR MECHANICAL,
 INCLUDING PHOTOCOPYING, RECORDING, OR BY
 ANY INFORMATION STORAGE AND RETRIEVAL
 SYSTEM, WITHOUT THE WRITTEN CONSENT OF THE
 ARCHITECTURAL FIRM.



TOTAL SQUARE FOOT: 10998 sq ft



Lowery Ln

HWY #5

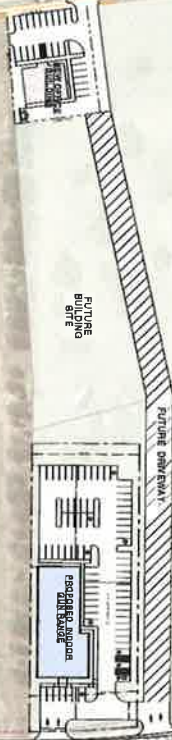
Main St

Broadway Ave

1894



WALMART
SUPERCENTER



FUTURE
BUILDING
SITE

FUTURE DRIVEWAY

PROPOSED
DRIVEWAY

MARKET PLACE

MARKET PLACE AV



FUTURE
DEVELOPMENT



ASHLEY
FURNITURE
CENTERS



PROPOSED
BUILDING

ASHLEY
FURNITURE

ASHLEY
WAREHOUSE

ASHLEY FUTURE
ACQUISITION

magery Date 3/1/2015 34°37'34.40" N 92°29'51.36" W c.l

PROPERTY LINE

HUNTER CROSSING

INTERSTATE 30



SCALE 1" = 60'

MASTER SITE PLAN

Proposed Master Plan for
Bryant Medical Campus - Saline Memorial Hospital
Market Place Avenue, Bryant, AR



1	Sheet 1 of 1
---	--------------



2511
AVENUE









October, 24 2017

Truett,

I request to be placed on the agenda for the upcoming Planning Commission Meeting. I will be requesting a Conditional Use Permit for the construction of duplexes on the following properties:

Lot 73R, of the replat of lots 73 and 74, Pikewood subdivision, No2, in the City of Bryant, Saline County, Arkansas

Lot 74R, of the replat of lots 73 and 74, Pikewood subdivision, No2, in the City of Bryant, Saline County, Arkansas

Each property will contain one building with 2 units.

Thank you,

A handwritten signature in blue ink, appearing to read "Kenneth J. Porter". The signature is stylized and cursive.

Kenneth J. (Jeff) Porter

**CONDITIONAL USE PERMIT
APPLICATION**

210 S.W. 3rd Street
Bryant, AR 72022
PHONE: 501-943-0857
FAX: 501-943-0992
EMAIL: tsmith@cityofbryant.com

DATE RECEIVED _____

FEE - \$125.00 (Check made payable to City of Bryant)

=====

APPLICANT KENNETH J PORTER (JEFF)

PHONE 501-779-2146 FAX _____ EMAIL kjeffp@sbcglobal.net

ADDRESS 2511 LAVERN #2 PO Box 732

CITY BRYANT STATE AL ZIP 72022

PROPERTY OWNER(S) SAME

ADDRESS _____ PHONE _____ FAX _____

PROJECT/DEVELOPMENT NAME _____

PROJECT LOCATION LAVERN IN BRYANT

PURPOSE OF CONDITIONAL USE PERMIT TO CONTINUE BUILDING
DUPLEXES

LEGAL DESCRIPTION OF PROPERTY (attach a separate document if necessary):

LOT 74R, OF THE REPLAT OF LOTS 73 AND 74,
PIKEWOOD SUBDIVISION, NO 2, IN THE CITY
OF BRYANT, SALINE COUNTY, ARKANSAS

This application must be signed by all owners of the subject property or an explanation given why this is not the case.

We, the undersigned, have read and understand the above.


Signature of Applicant


Date

Signature of Owner (s) Date

Signature of Owner (s) Date

**CONDITIONAL USE PERMIT
APPLICATION**

210 S.W. 3rd Street
Bryant, AR 72022
PHONE: 501-943-0857
FAX: 501-943-0992
EMAIL: tsmith@cityofbryant.com

DATE RECEIVED _____

FEE - \$125.00 (Check made payable to City of Bryant)

=====

APPLICANT KENNETH J PORTER (JEFF)

PHONE 501-779-2146 FAX _____ EMAIL kjeffp@sbcglobal.net

ADDRESS 2511 LAVERN #2 PO Box 732

CITY BRYANT STATE AR ZIP 72022

PROPERTY OWNER(S) SAME

ADDRESS _____ PHONE _____ FAX _____

PROJECT/DEVELOPMENT NAME _____

PROJECT LOCATION CENTER ST & LAVERN, BRYANT

PURPOSE OF CONDITIONAL USE PERMIT TO CONTINUE BUILDING
Duplexes

LEGAL DESCRIPTION OF PROPERTY (attach a separate document if necessary):

LOT 73R, OF THE REPLAT OF LOTS 73 AND 74,
PIKEWOOD SUBDIVISION, No 2, IN THE CITY OF
BRYANT, SALINE COUNTY, ARKANSAS

This application must be signed by all owners of the subject property or an explanation given why this is not the case.

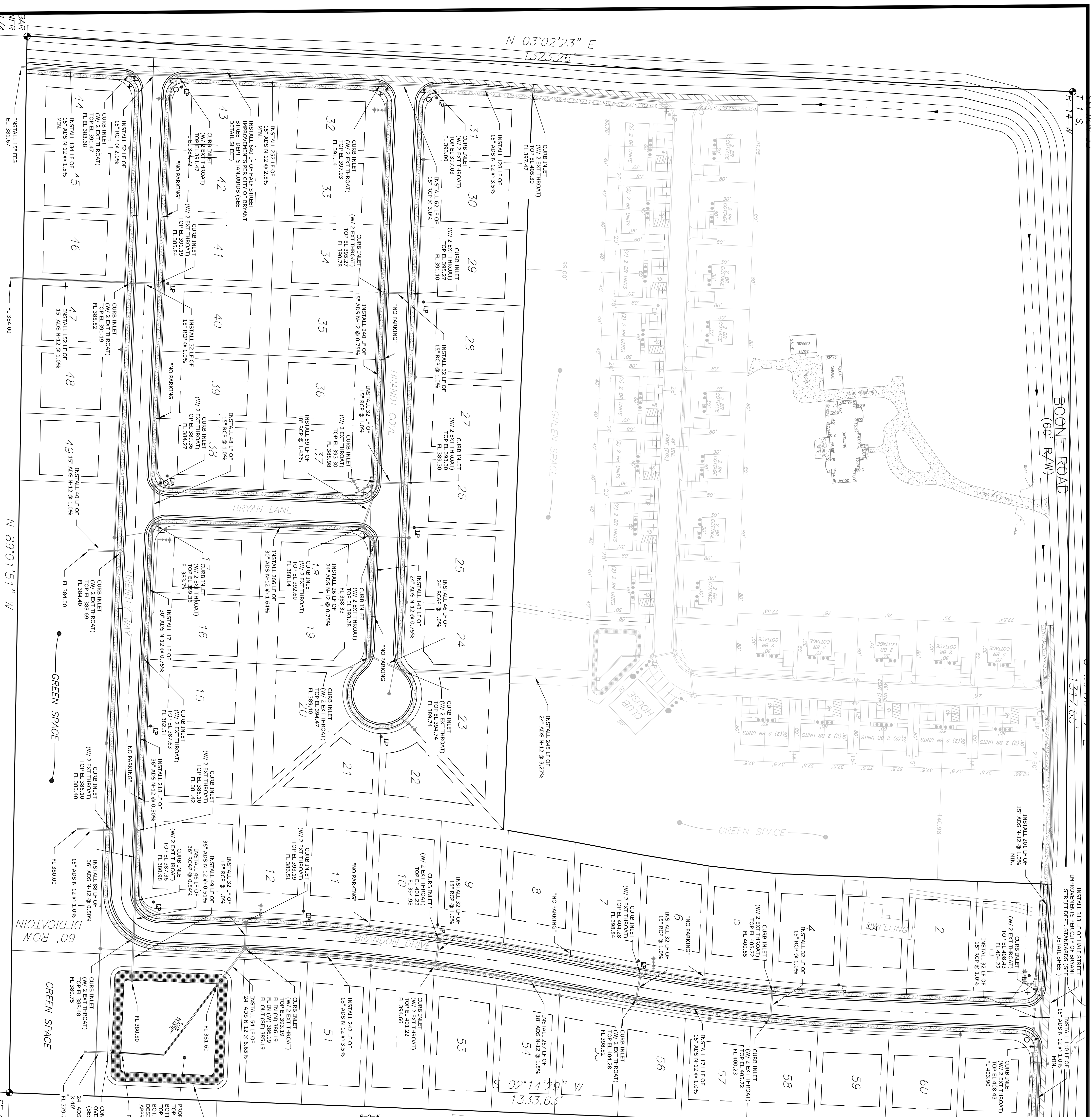
We, the undersigned, have read and understand the above.

Kent G Pt
Signature of Applicant _____ Date *10/24/17*

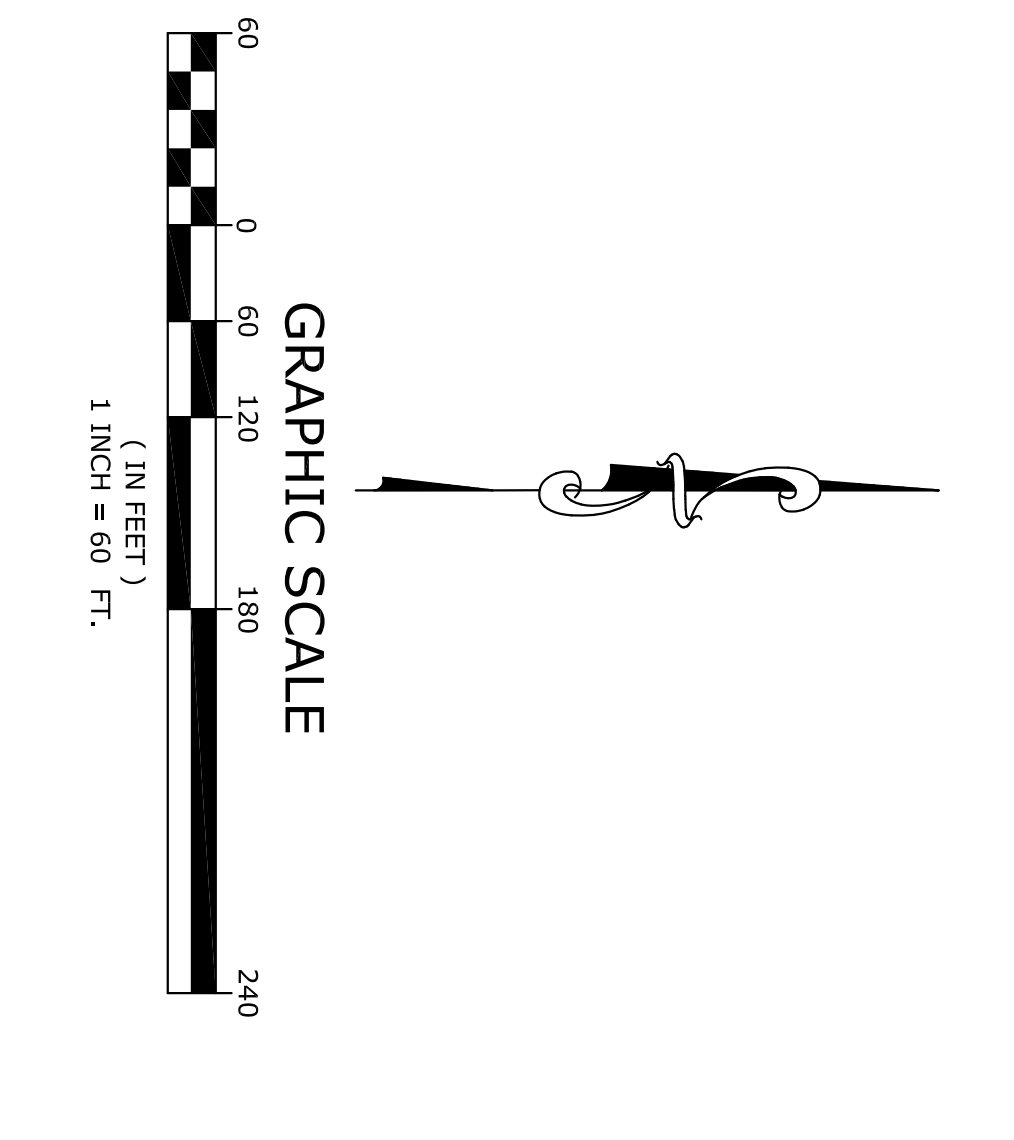
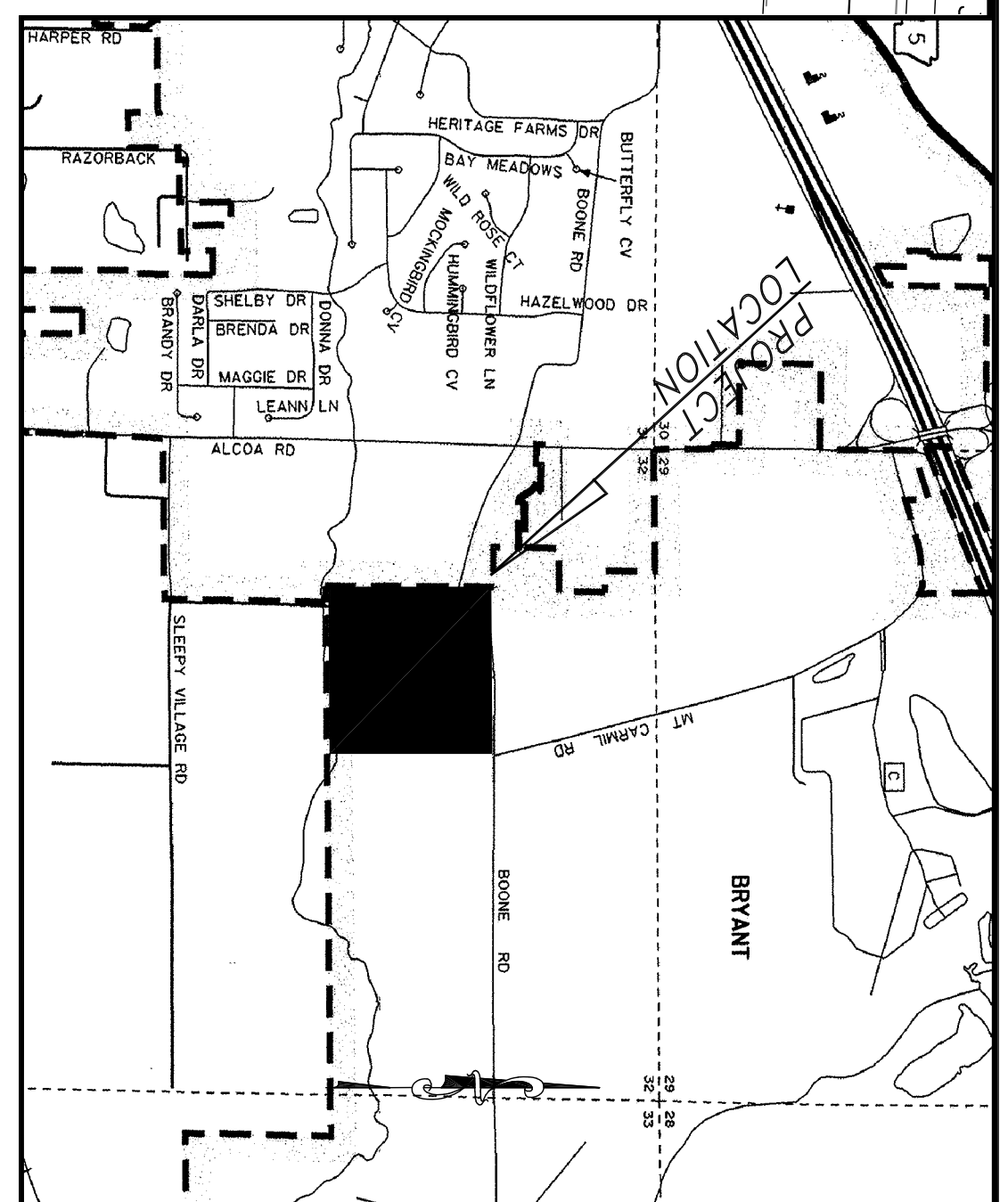
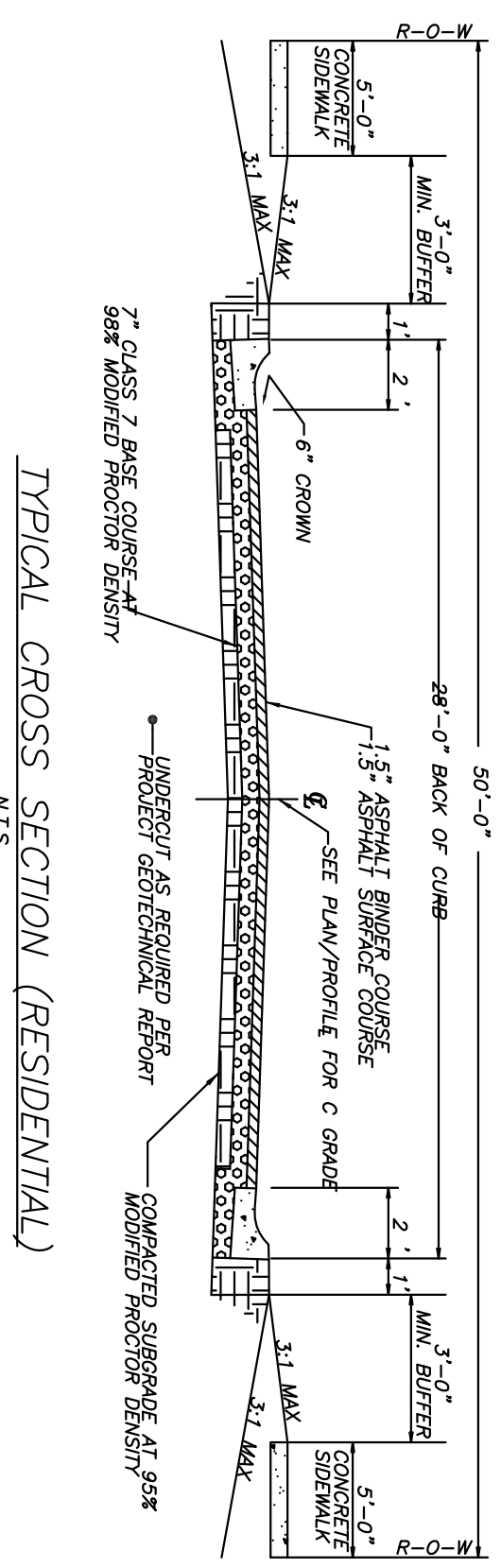
Signature of Owner (s) _____ Date _____

Signature of Owner (s) _____ Date _____

W



- GENERAL NOTES**
- 1) ALL STOP SIGNS SHALL BE 30" X 30"
 - 2) PROPOSED LOCATIONS OF TRAFFIC CONTROL MARKERS ARE APPROXIMATE
 - 3) ACTUAL LOCATION AND INSTALLATION MUST MEET UDOT AND CITY OF BRYANT SPECS
 - 4) PARKING SHALL BE PROVIDED ON ONE SIDE OF THE STREET. NO PARKING SIGNS TO MEET CITY SPECIFICATIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ADO REQUIREMENTS AND CITY SPECIFICATIONS AND
 - 5) CONTRACTOR SHALL PROVIDE IN BID THE COSTS FOR OPERATION TESTS ON ALL LOCATIONS TO BE DETERMINED BY THE CITY OF BRYANT.
 - 6) LIGHT POLES SHALL BE PLACED AT ALL INTERSECTIONS.
 - 7) ALL CORNERS TO HAVE A 25' RADIUS UNLESS OTHERWISE NOTED.
 - 8) ALL DRIVEWAYS SHALL BE CONSTRUCTED PER CITY OF BRYANT SPECIFICATIONS.
 - 9) BACK OF CURB RADIUS AT ALL INTERSECTIONS SHALL BE 25'.
 - 10) CURB INLETS CONSTRUCTED SO THAT POOLING OF WATER DOES NOT OCCUR.
 - 11) ALL STORM SEWER LIDS SHALL BE PER CITY OF BRYANT SPECIFICATIONS.
 - 12) ALL SIDEWALKS AND CURB/CUTTER TO BE CONSTRUCTED PER CITY OF BRYANT SPECIFICATIONS.
 - 13) SIDEWALK TO BE CONSTRUCTED WITH INDIVIDUAL DRIVEWAYS. ALL SIDEWALKS TO MEET ADA REQUIREMENTS.
 - 14) DRIVEWAYS SHALL BE CONSTRUCTED PER CITY OF BRYANT SPECIFICATIONS.
 - 15) DRIVEWAYS SHALL BE CONSTRUCTED PER CITY OF BRYANT SPECIFICATIONS.
 - 16) THE APPROXIMATE LOCATION OF KNOW SURFACE AND SUBSURFACE STRUCTURES, PILES, POWER, GAS, PHONE, ETC. ARE SHOWN ON THE DESIGN DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF THE APPROXIMATE DIMENSIONS, SHOWN AND NOT SHOWN, FOR THE STRUCTURE. THE COST OF SAND REPAIRS OR RELOCATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.



No.	Revisions	Date

Prepared For:
 CAPLE DEVELOPMENT/
 JAMES AND TAMMY BALLEW
 3400 ALCOA RD.
 BENTON, AR 72015

Scale: 1" = 60'
 Date: OCTOBER 2017
 Sheet: 2 of 11

THE HEIGHTS AT WAVERLY
 STREET & DRAINAGE PLAN



RICHARDSON ENGINEERING, PLLC
 CIVIL ENGINEERING:
 WATER/WASTEWATER • SITE
 DEVELOPMENT • SUBDIVISIONS

P.O. BOX 192
 BENTON, AR 72018
 PHONE: (501) 249-3141

**APPLICATION
FOR CHANGE IN
ZONING DISTRICT BOUNDARIES**

Applicant Name: James Ballew

Spouse Name: _____

Property Address: 5107 & 5313 Boone Rd, Bryant 72022

Parcel: 840-15288-000

Legal Description: SENW 2001-65373 (for reference)

See attached.

Existing Zoning Classification: RE

Requested Change: R2

Plat of Property is Attached:

Vicinity Map of Property is Attached:

The undersigned designates the following process agent or attorney to represent the applicant at all hearings:

This 25TH day of October, 2017

[Signature]

Applicant

Spouse of Applicant

3400 ALMA RD

Address Benton, Ar
72015

Legal Description: R2:

PROPERTY DESCRIPTION AS SURVEYED

THAT PART OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 32, TOWNSHIP 1 SOUTH, RANGE 14 WEST, SALINE COUNTY, ARKANSAS, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER; THENCE SOUTH 89°01'51" EAST ALONG THE SOUTH LINE THEREOF 43.72 FEET TO A POINT ON THE EAST RIGHT OF WAY LINE OF BOONE ROAD SAID POINT ALSO BEING THE POINT OF BEGINNING; THENCE ALONG SAID EAST RIGHT OF WAY LINE THE FOLLOWING COURSES: NORTH 04°34'26" EAST 63.28 FEET; THENCE NORTH 03°16'04" EAST 71.68 FEET; THENCE NORTH 02°42'50" EAST 50.00 FEET; THENCE NORTH 02°19'22" EAST 47.31 FEET; THENCE NORTH 02°33'27" EAST 84.21 FEET; THENCE NORTH 01°54'37" EAST 87.73 FEET; THENCE NORTH 02°22'52" EAST 85.34 FEET; THENCE NORTH 02°50'07" EAST 86.77 FEET; THENCE NORTH 04°37'07" EAST 63.70 FEET; THENCE SOUTH 87°45'31" EAST LEAVING SAID EAST RIGHT OF WAY LINE 924.08 FEET; THENCE NORTH 08°09'57" EAST 6.07 FEET; THENCE NORTH 09°59'42" EAST 85.78 FEET; THENCE NORTH 10°43'22" EAST 85.94 FEET; THENCE NORTH 09°28'37" EAST 85.68 FEET; THENCE NORTH 06°25'33" EAST 85.23 FEET; THENCE NORTH 02°14'29" EAST 334.78 FEET TO A POINT ON THE SOUTH RIGHT OF WAY LINE OF BOONE ROAD; THENCE ALONG SAID SOUTH RIGHT OF WAY LINE THE FOLLOWING COURSES: SOUTH 86°43'33" EAST 114.00 FEET; THENCE SOUTH 86°42'45" EAST 109.82 FEET; THENCE SOUTH 87°18'16" EAST 90.98 FEET TO A POINT ON THE EAST LINE OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER; THENCE SOUTH 02°14'29" WEST ALONG THE EAST LINE THEREOF 1287.32 FEET TO THE SOUTHEAST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER; THENCE NORTH 89°01'51" WEST ALONG THE SOUTH LINE THEREOF 1289.09 FEET TO THE POINT OF BEGINNING. CONTAINING 23.49 ACRES, MORE OR LESS.

**CONDITIONAL USE PERMIT
APPLICATION**

210 S.W. 3rd Street
Bryant, AR 72022
PHONE: 501-943-0857
FAX: 501-943-0992
EMAIL: tsmith@cityofbryant.com

DATE RECEIVED _____

FEE - \$125.00 (Check made payable to City of Bryant)
=====

APPLICANT Timothy Hendrix, Absolute Essence, LLC

PHONE 501-548-5857 FAX _____ EMAIL tbh5169@gmail.com

ADDRESS 232 Summit Valley Cir

CITY Maumelle STATE AR ZIP 72113

PROPERTY OWNER(S) Timothy Hendrix, Xavier Hendrix, & Bobby Pollins

ADDRESS 9416 HWY 5 N, Bryant, AR 72022 PHONE 501-548-5857
FAX _____

PROJECT/DEVELOPMENT NAME Absolute Essence, LLC

PROJECT LOCATION 9416 HWY 5 N, Bryant, AR 72022

PURPOSE OF CONDITIONAL USE PERMIT Medical Marijuana Dispensary

LEGAL DESCRIPTION OF PROPERTY (attach a separate document if necessary):

The property located at 9416 HWY 5 N, Bryant, AR 72022 is a 7,650 SF commercial building,
with a lot size of 63,597 SF.

A GUIDE TO PROCEDURES FOR CONDITIONAL USE PERMIT APPROVAL

PURPOSE

Certain uses, while generally not suitable in a particular Zoning District, may, under certain circumstances, be acceptable. When such circumstances exist, a conditional use permit may be granted. The Planning Commission after a public hearing and without objection from any adjoining property owner can authorize the issuance of a Conditional Land Use Permit. This permit will be issued with a specific land use and expiration date and can only be renewed one time.

The Planning Commission shall review the Preliminary Plat and consider the following: interrelationship with the plan elements to conditions both on and off the property; conformance to the City's Comprehensive Plan; the impact of the plan on the existing and anticipated traffic and parking conditions; the adequacy of the plan with respect to land use; pedestrian and vehicular ingress and egress; building location and height; architectural and engineering features, landscaping, lighting; provisions for utilities; site drainage; open space; loading and unloading areas; grading; signage; screening; setbacks. And other related matters. The Planning Commission may approve, disapprove, or table the request for a Conditional Use Permit. The Planning Commission may impose necessary conditions and safeguards on to the permit where they deem as necessary.

PROCESS

Step 1 - Project Considerations

The applicant should carefully review what the present comprehensive plan calls for in the location or area affected. The applicant is advised to review the proposed conditional use in advance of formal application with area residents, property owners, and other parties who may be affected by the proposed changes.

The Planning Commission recommends that you discuss your proposal with the adjacent property owners before a formal application is made. Any conflicts you can resolve ahead of time will make it easier and faster for the City to process your applications.

Local utilities and other special agencies should be contacted and consulted regarding the requirements for future development in the area, if necessary.

Step 2 - Review by Staff

Prior to application, an appointment should be made with the planning staff to review the proposed site plan and discuss the feasibility of the request with key city officials, the history of similar proposals, the intent of City policy, possible environmental concerns and required submittal data and procedures to be followed through the process.

Step 3 - Filing the Application -

The applicant will submit to the Planning Commission Coordinator two (2) weeks prior to the Planning Commission meeting, which is held the 2nd Monday of each month, the following:

1. A letter requesting to be placed on the agenda for the upcoming meeting naming the purpose,

2. Submit the completed application
3. Submit the application fee
4. Submit a vicinity map of the location of the property
5. Submit a legible typed legal description of the property to be granted the Conditional Use Permit.
6. Submit ^{eight}~~twenty~~ (8) full size copies of the Site Plan drawn to scale showing:
 - a. the property dimensions,
 - b. grading, landscaping and location of the utilities (i.e. water, sewer, septic system etc.), as applicable;
 - c. location of all existing and proposed buildings and their size, including square footage;
 - d. location of all existing and proposed curb cuts, driveways, access roads, parking spaces, off-street loading areas, and sidewalks.
7. An explanation outlining the Conditional Use requested, along with any information explaining the operation, including days and hours of operation if applicable. This letter may be photocopied for the information packets.

Once the application has been filed, the material will be reviewed to make sure all the required information is provided. The applicant will be notified if additional information is required. The application will be placed on the agenda for application acceptance.

Step 4 - Staff Review for Planning Commission

Once the application has been accepted by the Planning Commission the request will be scheduled for public hearing before the Planning Commission within 60 days. At that time the following requirements must be met:

8. You must post a Notice of Conditional Use Permitting on the subject property site no fewer than 15 days prior to the public hearing date. *- Newspaper ad as well*

~~The Planning Department will submit the notice to be published in the Benton Courier.~~

Step 5 - Public Hearing and Planning Commission Review

The Planning Commission is required to hold at least one hearing on any proposed general plan change. The City would recommend that you are prepared to give a presentation with enlarged drawings or elevations of the proposed units, plat and/or other materials that would be helpful for and during the public hearing to better familiarize not only the Planning Commission, but any residents that are present for the public hearing on your proposed land use request.

At the public hearing:

Comments will be accepted from the applicant and any interested persons who wish to make a statement on the application.

The planning commission will close the public comment portion of the hearing to consider the information and documentation, and public testimony.

If the Conditional Use Permit is not approved by the Planning Commission, the reasons for such action shall be recorded in the proceedings and transmitted to the applicant.

This application must be signed by all owners of the subject property or an explanation given why this is not the case.

We, the undersigned, have read and understand the above.

Timothy Hendrix 10/12/2017
Signature of Applicant Date

Timothy Hendrix 10/12/2017
Signature of Owner (s) Date

Xavier J Hendrix 10/12/2017
Signature of Owner (s) Date

Bobby J Pellins 10/12/2017
Signature of Owner (s) Date

Absolute Essence, LLC
9416 HWY 5 N
Bryant, AR 72202

October 10, 2017

City of Bryant
Planning Commission
210 S.W. 3rd St.
Bryant, AR 72022

Dear Planning Commission,

Please accept this letter as our formal request to be placed on the agenda for the upcoming meeting to discuss a Conditional Use Permit for a Medical Marijuana Dispensary located at 9416 HWY 5 N, Bryant, AR 72022.

Regards,
Timothy Hendrix
Absolute Essence, LLC

Absolute Essence, LLC
9416 HWY 5 N
Bryant, AR 72202

October 10, 2017

City of Bryant
Planning Commission
210 S.W. 3rd St.
Bryant, AR 72022

Dear Planning Commission,

Absolute Essence, LLC, was established on July 10, 2017 with the innovative foresight of maintaining and operating a Medical Marijuana Dispensary within the state of Arkansas pursuant to the rules and regulations of the Arkansas Medical Marijuana Commission and Alcohol Beverage Control Board. Absolute Essence, LLC, will be located at 9416 Highway 5 North Bryant, Arkansas 72022. Our mission is to inform, inspire, and nurture the human spirit through alternative natural medicinal marijuana information, services, and products. The purpose of Absolute Essence, LLC, is to provide alternative medicinal options for patients who have a valid medical marijuana registry identification card. Our organization is focused on having a positive impact on the economy and community in which it operates through a shared value approach that intertwines the interests of all stakeholders.

Absolute Essence's initial hours of operation shall be as follows: closed on Sunday and Monday; open from 10 a.m. to 7 p.m. Tuesday, Wednesday, Thursday; and open from 10 a.m. to 10 p.m. Friday and Saturday. These hours of operation are subject to change to efficiently and effectively accommodate patient demand. Absolute Essence shall have eight to sixteen employees comprised of registered medical marijuana dispensary agents and qualified security personnel.

The property located at 9416 HWY 5 n, Bryant, AR 72022 is a 7,650 SF commercial building and the lot size is 63,597 SF. This location is owned by Timothy Hendrix, Xavier Hendrix, and Bobby Pollins. Included is a Site Plan drawn to scale portraying:

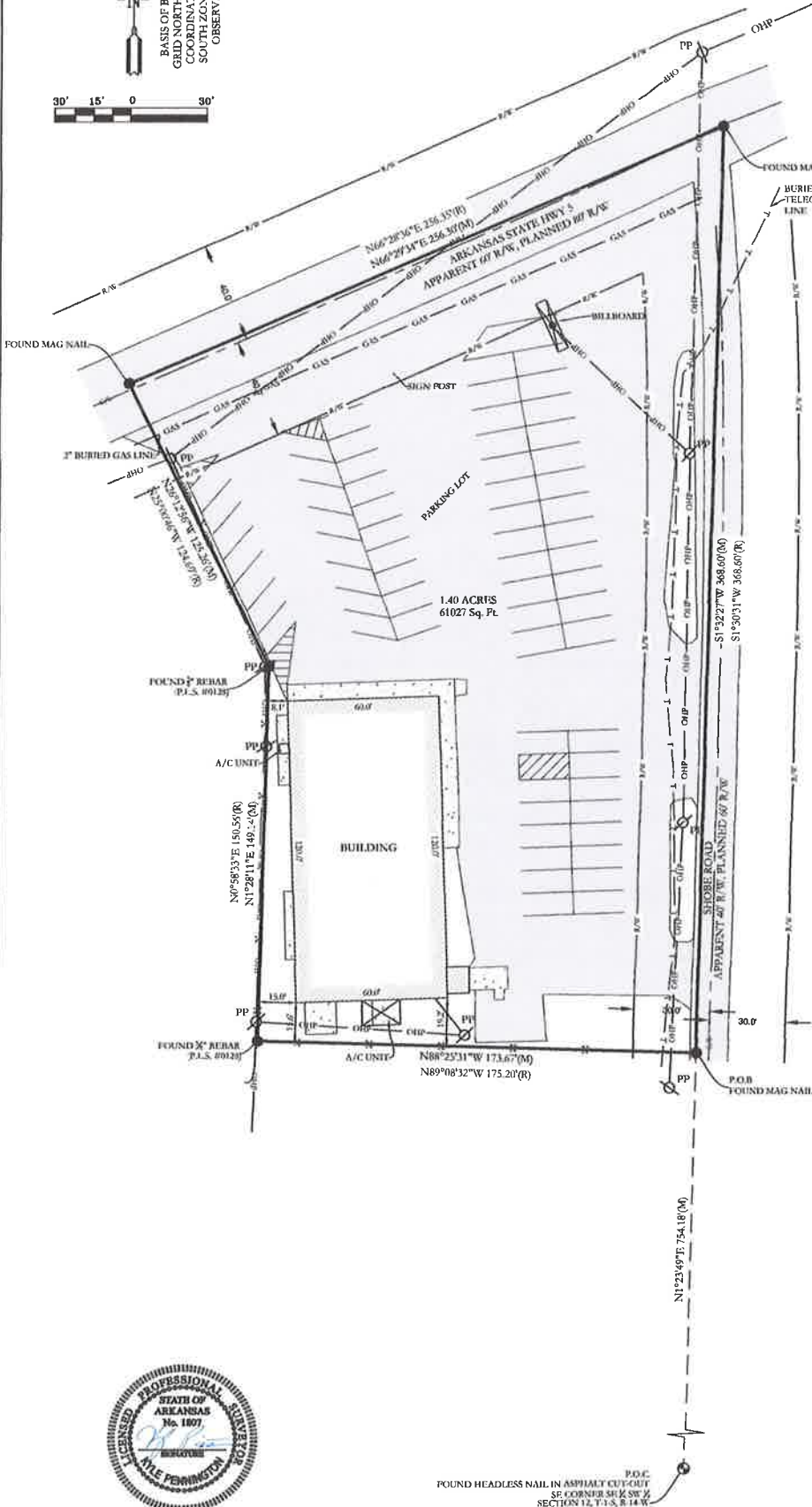
- The property dimensions
- Grading, landscape, and location of the utilities (i.e. water, sewage, septic systems, as well as others, as applicable)
- Location of all existing and proposed buildings and their size, including square footage

- Location of all existing and proposed curb cuts, driveways, access roads, parking spaces, off-street loading areas, and sidewalks

Absolute Essence is requesting a Conditional Use Permit for the purpose of operating a Medical Marijuana Dispensary pursuant to Amendment No. 98 of the Constitution of the State of Arkansas of 1874, the Medical Marijuana Amendment of 2016, and the rules and regulations of the Arkansas Medical Marijuana Commission and Alcohol Beverage Control Board.

Regards,
Timothy Hendrix
Absolute Essence, LLC

BASIS OF BEARINGS:
 GRID NORTH ARKANSAS
 COORDINATE SYSTEM
 SOUTH ZONE BY G.P.S.
 OBSERVATIONS



AS SURVEYED DESCRIPTION:

PART OF THE SE ¼ OF THE SW ¼ OF SECTION 12, TOWNSHIP 1 SOUTH, RANGE 14 WEST, SALINE COUNTY, ARKANSAS, MORE FULLY DESCRIBED AS FOLLOWS:

COMMENCING AT A HEADLESS NAIL, ACCEPTED AS THE SOUTHEAST CORNER OF SAID SE ¼ OF THE SW ¼ OF SECTION 12; THENCE N01°23'49" E, A DISTANCE OF 754.18 FEET TO A FOUND MAG NAIL, BEING THE POINT OF BEGINNING OF HEREIN DESCRIBED TRACT; THENCE N88°25'31" W, A DISTANCE OF 173.67 FEET TO A FOUND ¾" REBAR (P.L.S. #0128); THENCE N01°28'11" E, A DISTANCE OF 149.14 FEET TO A FOUND ¾" REBAR (P.L.S. #0128); THENCE N26°12'56" W, A DISTANCE OF 125.26 FEET TO A FOUND MAG NAIL IN ARKANSAS HIGHWAY #5; THENCE N66°29'34" E, ALONG SAID HIGHWAY, A DISTANCE OF 256.30 FEET TO A FOUND MAG NAIL; THENCE LEAVING SAID HIGHWAY, S01°32'27" W, A DISTANCE OF 368.60 FEET TO THE POINT OF BEGINNING, SAID TRACT CONTAINING 1.401 ACRES, OR 61,026.9 SQUARE FEET, MORE OR LESS, OF WHICH, 0.979 ACRES, OR 42,642.1 SQUARE FEET, MORE OR LESS, IS EXCLUDED FROM ROAD RIGHTS OF WAY.

GENERAL SURVEYOR'S NOTES:

THIS PLAT REPRESENTS A BOUNDARY SURVEY OF A PARCEL DESCRIBED IN SALINE COUNTY DEED BOOK 2012, PAGE 35277. (DEED OF RECORD)

NOTE: THIS SURVEY IS BASED ON LEGAL DESCRIPTIONS AND TITLE WORK FURNISHED BY OTHERS. NO INVESTIGATION OR INDEPENDENT SEARCH HAS BEEN MADE FOR ENCUMBRANCES, RESTRICTIVE COVENANTS, OWNERSHIP TITLE EVIDENCE, OR ANY OTHER FACTS WHICH AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE. ANY LISTED EASEMENTS OR RIGHTS-OF-WAY WERE DETERMINED FROM LISTED REFERENCE DOCUMENTS AND HAVE NOT BEEN CHECKED FOR ACCURACY OR CORRECTNESS.

ONLY LISTED REFERENCE DOCUMENTS HEREON WERE USED AND CONSIDERED AS A PART OF THIS SURVEY. OTHER DOCUMENTS, IF ANY, COULD FURTHER AFFECT THIS TRACT.

NO PORTION OF THE PROPERTY DESCRIBED HEREON IS CONTAINED WITHIN THE 100-YEAR FLOOD PLANE, AS SHOWN ON THEN FLOOD INSURANCE RATE MAP, PANEL #05125C0180C, DATED JUNE 19, 2012.

REFERENCE DOCUMENTS:

- DEEDS FILED IN SALINE COUNTY:
 - BOOK 2008, PAGE 93686
 - BOOK 2010, PAGE 60206
 - BOOK 2012, PAGE 35277
- BOUNDARY SURVEY BY WILLIAM W. HOPE, PLS #0128, DATED JUNE 01, 1987.
- BOUNDARY SURVEY BY WILLIAM W. HOPE, PLS #0128, DATED OCTOBER 21, 2008.
- RIGHTS OF WAY DETERMINED USING CITY OF BRYANT MASTER TRANSPORTATION PLAN.



By affixing my seal and signature, I Daniel Kyle Pennington, Arkansas PLS No, 1807, hereby certify that this drawing correctly depicts a survey compiled by me or under my direct supervision.

P.O.B.
 FOUND HEADLESS NAIL IN ASPHALT CUT-OUT
 SE CORNER SW ¼ SW ¼
 SECTION 12, T13S, R14W
 42" RED OAK: S87°E, 20.8"
 CHAIN-LINK FENCE COR: S39°W, 36.50"
 1.5" IRON SHAPET: S90°W, 18.59"

LEGEND

- ▲ - Computed point
- - Found monument
- - Set #5 RB/Plas. Cap
- (M) - Measured
- (R) - Record
- (P) - Platted

HOPE CONSULTING
 ENGINEERS - SURVEYORS

117 North Market Street,
 Benton, Arkansas 72015
 PH. (501)315-2626
 FAX (501) 315-0024
 www.hopeengineers.com

FOR USE AND BENEFIT OF:
OKO HOLDING, LLC
FIRST NATIONAL TITLE COMPANY

PART OF THE SE ¼ SW ¼ OF SECTION 12
 TOWNSHIP 1 SOUTH, RANGE 14 WEST
 SALINE COUNTY, ARKANSAS

DATE: 08/28/2017	C.A.D. BY: BJOHNSON	DRAWING NUMBER:
REVISED:	CHECKED BY:	17-0570
SHEET:	SCALE: 1"=30'	
500	01S	14W 0 12 320 62 1807



Google

Imagery ©2017 Google, Map data ©2017 Google United States 100 ft

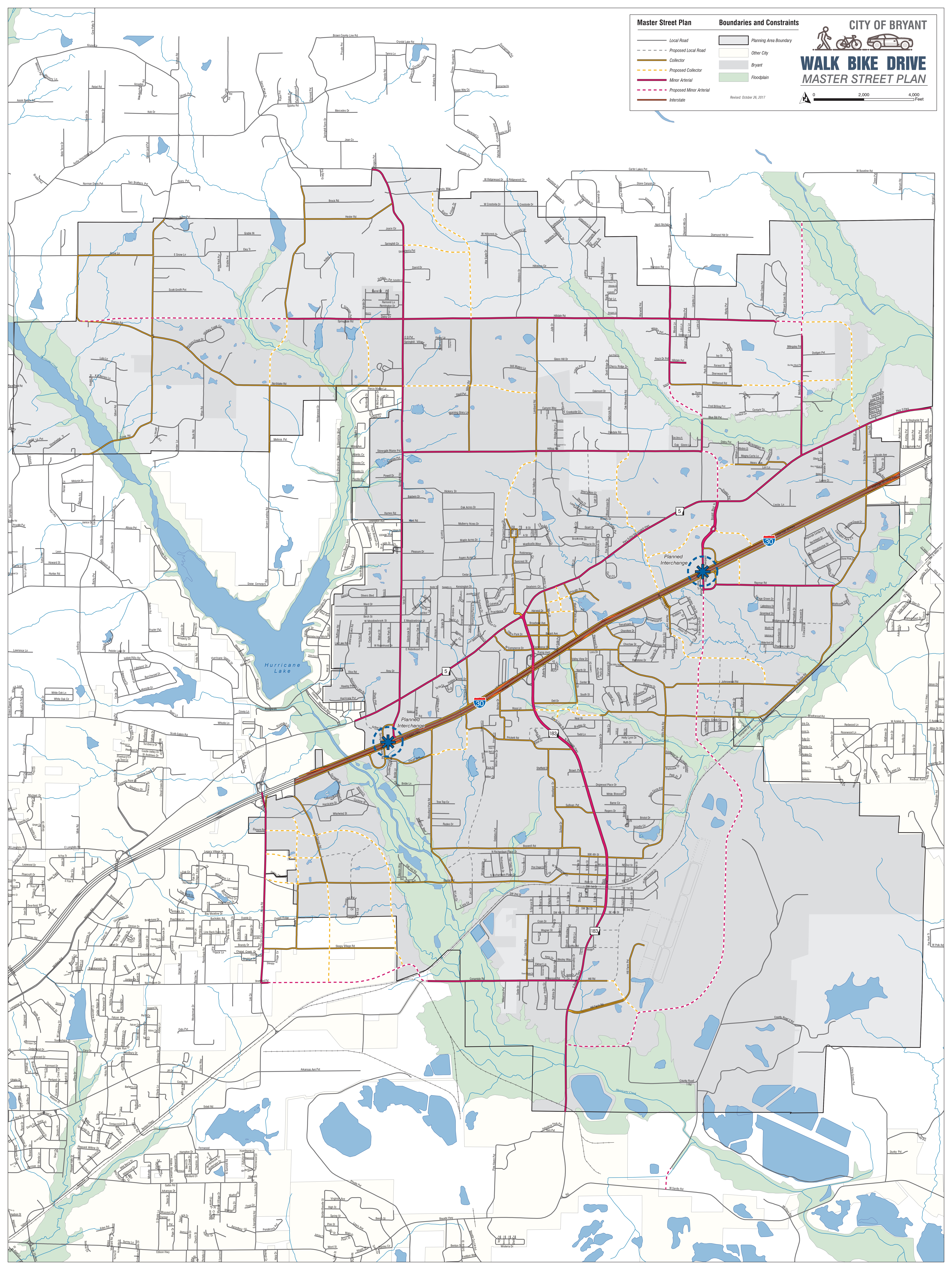
Master Street Plan

Boundaries and Constraints

- Local Road
- Proposed Local Road
- Collector
- Proposed Collector
- Minor Arterial
- Proposed Minor Arterial
- Interstate

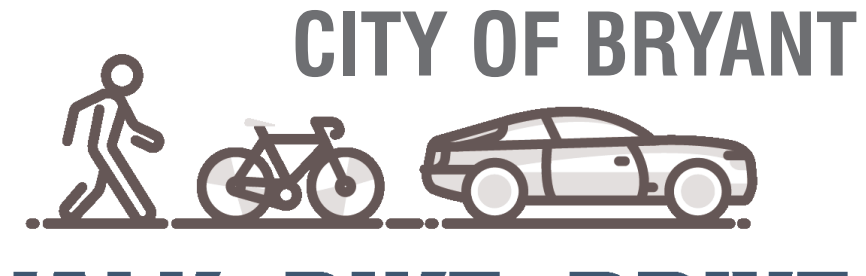
- Planning Area Boundary
- Other City
- Bryant
- Floodplain

CITY OF BRYANT
WALK BIKE DRIVE
MASTER STREET PLAN
Revised: October 26, 2017
0 2,000 4,000 Feet



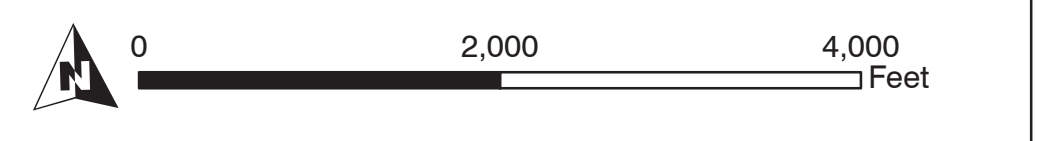
Bike Pedestrian Plan

Boundaries and Constraints



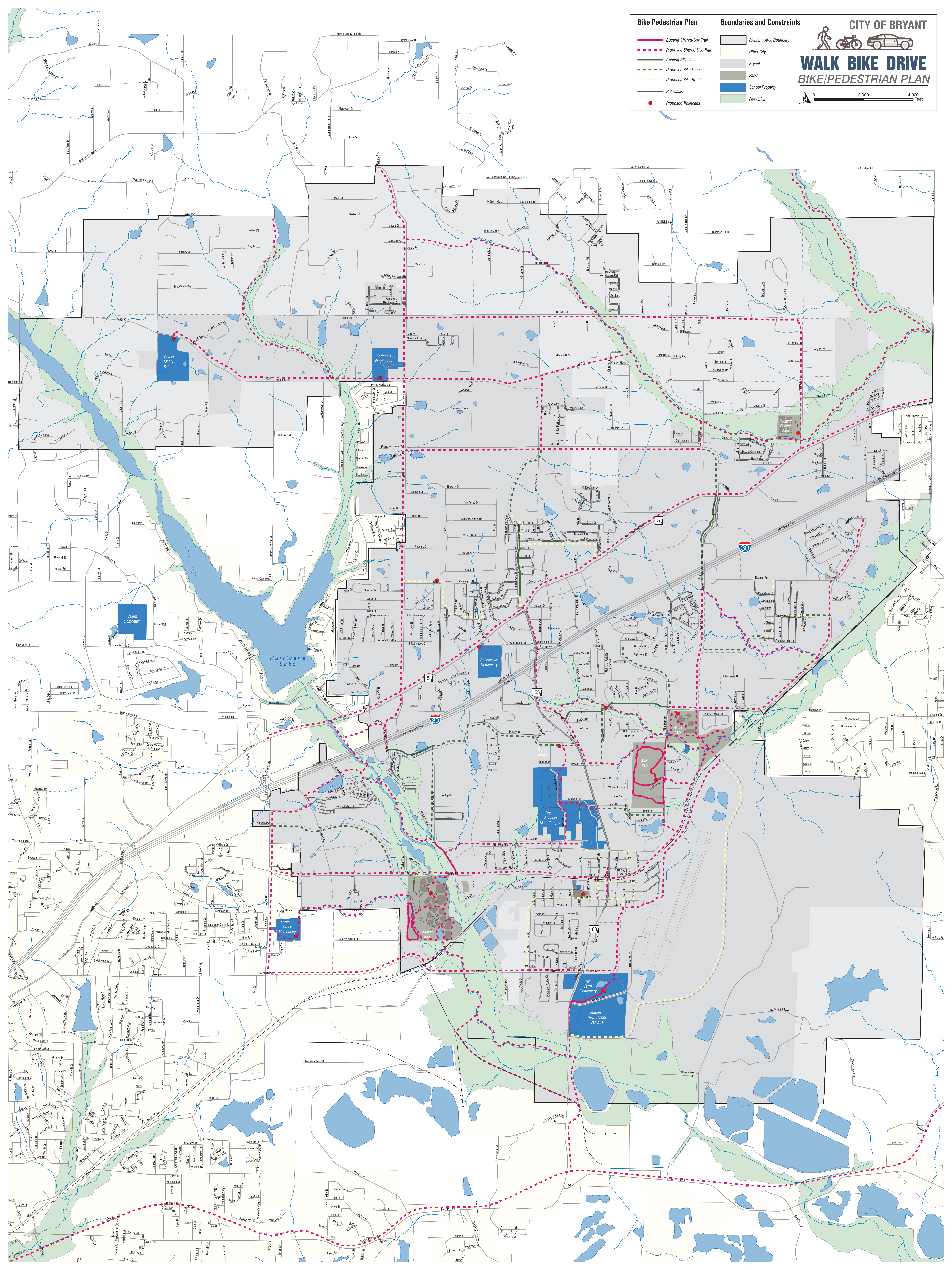
CITY OF BRYANT

WALK BIKE DRIVE
BIKE/PEDESTRIAN PLAN



- Existing Shared-Use Trail
- Proposed Shared-Use Trail
- Existing Bike Lane
- Proposed Bike Lane
- Proposed Bike Route
- Sidewalks
- Proposed Trailheads

- Planning Area Boundary
- Other City
- Bryant
- Parks
- School Property
- Floodplain



ACCESS MANAGEMENT PLAN
Bryant Parkway
(Hilltop Road to Union Pacific Railroad)

- I. ROUTE – This access management plan pertains to Bryant Parkway located Between Hilltop Road and the Union Pacific Railroad.
- II. STATEMENT OF PURPOSE – The Bryant Parkway will provide traffic relief and enhanced access to the eastern portion of the city. Within the Bryant Master Transportation Plan, the Bryant Parkway is classified as a Minor Arterial. The primary purpose for this plan is to protect the capacity of the roadway to carry significant local and intra-regional traffic. The secondary purpose is to increase the safety for drivers, cyclists, and pedestrians that use this facility. It is the intent of this plan to provide access to abutting properties consistent with the primary and secondary objectives.
- III. AUTHORITY – The City has specific legal authority to regulate access to public roads. This authority is found in Arkansas Code Annotated 14-56-419.
- IV. ACCESS PLAN – Management of access to the roadway is necessary to achieve both the primary and secondary purposes of the plan. The Access Management Plan is detailed in Appendix B. The Plan is a Specific Access Management Plan in which all median breaks are specifically identified. Standards for driveways/connections are established to be applied during plat/development review prior to approval by the City and through requests for driveway access to the roadway.
- V. PLAN ADOPTION/TERMINATION/MODIFICATION – This plan will be deemed effective when adopted by ordinance by the Bryant City Council following adoption by the Bryant Planning Commission. This plan may be terminated or modified, in whole or in part only by ordinance by the Bryant City Council after modification or termination by the Bryant Planning Commission. Modification and amendment shall be handled in accordance with paragraph B of Section VI of this plan.
- VI. PLAN ADMINISTRATION –
 - A. Permit Application. A permit is required for new driveway access to Bryant Parkway. Any legal person or his/her agent owning property abutting the Roadway may request a driveway access permit. The permit may be requested via an approval request for a large scale development, final plat, preliminary plat, small scale development, or driveway permit. The applicant shall be required to submit a detailed plan for the driveway including a map showing its exact location and a design that shows the curb radii, driveway throat width and length, and that specifies the projected volume of turns into and out of the driveway (under peak conditions). Design shall be in accordance with the City of Bryant Minimum Standard Specifications for Streets. Any joint access agreements with other property owners should also be submitted. Provision of joint access via easement and a shared use agreement may be required as a condition of driveway approval. A permit shall only be approved if the application meets the standards set forth in this plan. No permit shall be allowed to be granted that does not comply with the standards of this plan.

A permit which is tied to a plat or development approval that is subject to approval by the Bryant Planning Commission or any of its committees, shall be reviewed and approved with the approval of the plat or development. A permit which is not tied to a plat or development approval by the Planning Commission or its committees shall be

reviewed and issued by the Planning Director. To be deemed effective, an approved permit shall require a certificate signed by the Planning Director which is contained in Appendix C of this document.

B. Amending the Plan. Plan amendments will be considered by the Bryant City Council at the request of the Bryant Planning Commission following adoption of an amendment by the Bryant Planning Commission. Any plan amendment shall require an affirmative vote by two-thirds of the entire Bryant City Council. Action on the plan amendments may only be taken after a minimum 60-day review period. Such review period shall be measured from the date written notice of a request for amendment is received by the City.

Pursuant to Ordinance XXXX-XX of the City of Bryant City Council approved on XXth day of _____.

Jill Dabbs, Mayor

APPENDIX A

BRYANT PARKWAY DESIGN CONCEPT

As a Minor Arterial, the proposed design for Bryant Parkway is intended to balance the need to provide for long distance travel on the roadway and reasonable access to abutting properties while at the same time maintaining the capacity of the roadway to operate in a safe and efficient manner. Consequently, access to abutting property is subordinate to the goal of traffic movement and subject to necessary management of entrances and exits.

Definitions –

Full Median Break - breaks in which vehicular movements, including left turns, are allowed from all directions of a four-point intersection or roundabout.

Partial Median Break - breaks in which vehicular movements, including left turns, from one or more directions are unavailable. Partial median breaks may include intersections where turns from one direction are unavailable due to sight distance. Partial median breaks may also include three-point intersections where movements are unavailable from one direction; these breaks are eligible for conversion to a full break. Partial median breaks are selected as an alternative to full median breaks based on topography, supporting street network, and volume of turning traffic.

(See Figure 1 and Figure 2 on following pages)

Figure 1: Bryant Parkway North of I-30



Figure 2: Bryant Parkway South of I-30



APPENDIX B

Specific Access Management Plan Bryant Parkway: from Hilltop Road to Union Pacific Railroad

Access management addresses the relationship between roads and adjacent land use. To provide the safest and highest capacity road it is necessary to manage the location of major intersection and spacing of driveways. The access management plan for the Bryant Parkway was developed using standards set forth for the regional arterial network for Central Arkansas by Metroplan. These standards were developed through research and are derived from standards developed by the Florida DOT.

General design framework – Future four-lane median-divided street with full median breaks generally spaced at 1/4 mile intervals and future traffic signals/roundabout intersections generally spaced at 1/2 mile intervals. Future signal/roundabout intersection locations will be determined by meeting warrants, on a case by case basis, with preference given to full median breaks.

All existing connections to the street shall be obliterated. In certain locations new connections shall be constructed to ensure access. No land along the future route shall be platted into lots too small to meet the minimum connection spacing requirement unless a written easement agreement is executed between adjacent properties. Provision of joint access via easement and a shared use agreement may be required as a condition of driveway approval. Property fronting Bryant Parkway which abuts an intersecting lower classification street shall obtain primary access from the intersecting street.

Specific Design Elements

Due to the importance of this roadway as a primary north-south corridor within Bryant, this design framework indicates the long-term build out of the roadway, extending beyond current planning horizons of 30 years. The following design elements will guide the development of Bryant Parkway in order to ensure sustainability and ease of future development in surrounding areas.

- Divided four-lane roadway with a raised median.
- Minimum Connection (i.e. driveway or intersection)
 - From Hilltop-Hilldale intersection to Henry Avenue, spacing of 150 feet (distance from inner edge of driveway/street to inner edge of driveway/street)
 - From Henry Avenue to Highway 5, spacing of 245 feet.
 - South of Highway 5, spacing of 440 feet.
- Minimum Traffic Signal/Roundabout Intersection Spacing of ¼ mile, ½ mile preferred spacing.

Thirteen (13) Full or Partial Median Breaks (identified by MB# on Figure #1) at the following locations:

- MB#1 – Intersection of Hilldale Road and Bryant Parkway,
- MB#2 – Future intersection of Henry Avenue and Bryant Parkway,
- MB#3 – Future median break,
- MB#4 – Intersection of HWY 5 and Bryant Parkway,
- MB#5 – Existing median break,
- MB#6 – Future intersection at roundabout,
- MB#7 – Existing median break,
- MB#8 – Northern Intersection of Bryant Parkway and Interstate-30 Access,
- MB#9 – Southern Intersection of Bryant Parkway and Interstate-30 Access,
- MB#10 – Future intersection,

MB#11 – Future intersection,

MB#12 – Future intersection of Bryant Parkway and Johnswood Road,

MB#13 – Future intersection of Bryant Parkway and Shobe Road.

Concept Specifics for Each Median Break

MB #1 – Future intersection of Hilldale Road and Bryant Parkway – Full median break –

Rationale – Proposed break will serve intersection of major roadways.

MB #2 – Future intersection of Bryant Parkway and Henry Avenue – Full median break –

Rationale – Proposed break will serve access to the school and neighborhood to the east.

MB #3 – Future median break between Highway 5 and Henry Avenue – Full median break –

Rationale – Proposed break will serve future development.

MB #4 – At intersection of HWY 5 and Bryant Parkway – Full median break –

Rationale – Proposed break will serve the intersection of major roadways.

MB #5 – At future intersection 560 feet South of MB#4 – Full median break –

Rationale – Proposed break will serve future development.

MB #6 – At future intersection 568 feet south of MB#5 – Full Median Break –

Rationale – Proposed break will serve the intersection of roadways at an existing roundabout for future development.

MB #7 – At future intersection 426 feet South of MB#6 – Full median break – *Rationale* – Proposed break will serve future development.

MB #8 – At northern Intersection of Bryant Parkway and Interstate-30 Access – Full median break –

Rationale – Proposed break will serve the intersection of major roadways.

MB #9 – At southern Intersection of Bryant Parkway and Interstate-30 Access – Full median break –

Rationale – Proposed break will serve the intersection of major roadways.

MB #10 – At future intersection 1,883 feet South of MB#9 – Partial median break –

Rationale – Proposed break will serve future development and future street network.

MB #11 – At future intersection 888 feet South of MB#10 – Full median break –

Rationale – Proposed break will serve future development and future street network.

MB #12 – At intersection of Bryant Parkway and Johnswood Road – Full median break –

Rationale – Proposed break serves the existing street network.

MB #13 – At intersection of Bryant Parkway and Shobe Road – Full median break –

Rationale – Proposed break serves the existing street network.

Table 2: Median Break Distances

<i>Bryant Parkway Segment</i>	<i>Length of Segment</i>
MB#1 → MB#2	1,015 Feet
MB#2 → MB#3	684 Feet
MB#3 → MB#4	654 Feet
MB#4 → MB#5	560 Feet
MB#5 → MB#6	568 Feet
MB#6 → MB#7	426 Feet
MB#7 → MB#8	496 Feet
MB#8 → MB#9	1,632 Feet
MB#9 → MB#10	1,883 Feet
MB#10 → MB#11	888 Feet
MB#11 → MB#12	1,016 Feet
MB#12 → MB#13	1,309 Feet

APPENDIX C

BRYANT PARKWAY ACCESS MANAGEMENT	
THE CITY OF BRYANT	
Approves this project ____	Disapproves this project ____
Signature _____	Date _____
Title _____	
Comments _____	

MICHAEL BOLIN & ASSOCIATES, INC.

CONSULTING ENGINEERS
P. O. Box 605
BENTON, AR 72018-0605

November 2, 2017

Planning & Development Commission
City of Bryant
210 Southwest 3rd Street
Bryant, AR 72022

Re: Job No. 178-ABC
Hurricane Gardens
Bryant, Arkansas

Gentlemen:

We are submitting the following for Hurricane Gardens:

Twenty (20) copies of the Final Plat
Two (2) diskettes
One (1) copy of the Bill of Assurance
Approval letter from Arkansas Department of Health
Certification that infrastructure improvements have been installed
Check in the amount of \$5,700.00 for Water/Sewer Impact Fee and Flushing Fee
Check in the amount of \$81.00 for the Final Plat Review Fee

We would appreciate this being placed on the agenda for the next Planning Commission meeting.

Please contact our office if you have any questions or comments.

Very truly yours,

MICHAEL BOLIN & ASSOCIATES, INC.



Michael Bolin, P.E.
President

MB:lo
Enclosures



210 S.W. 3rd Street
 Bryant, AR 72022
 PHONE: 501-847-5559 ext. #505
 FAX: 501-847-5332
 EMAIL: ljones@cityofbryant.com

Subdivision Checklist

Subdivision Name HURRICANE GARDENS
 Contact Person MICHAEL BOLIN Phone 501-776-2692
 Mailing Address P.O. Box 605, BENTON, AR 72018

I. BASIC INFORMATION NEEDED ON THE PLAT

- 1. Name of Subdivision/Project
- 2. Current zoning PUD
- 3. Name and Address of owner of Record
- 4. Illustrate Source of Title giving deed record book and page number
- 5. Name & address of the sub-divider
- 6. Date of Survey
- 7. Vicinity map locating streets, highways, section lines, railroad, schools, & parks within 1/2 mile
- 8. Legal description of the property with exact boundary lines
- 9. Acreage of property
- 10. Number of Lots
- 11. Lot area in square feet
- 12. Lot lines with appropriate dimensions
- 13. Building setback lines
- 14. Preliminary Engineering certificate seal and signature on each page
- 15. Certificate of Engineering Accuracy
- 16. Certificate of Owner
- 17. Certificate of Final Plat Approval
- 18. Certificate of Recording
- 19. Show scale (not less than 1" = 100')
- 20. North Arrow
- 21. Show Title block
- 22. Show adjoining property owners
- 23. Layout of all proposed streets including traffic control devices (stop signs, speed limit, etc.)
- 24. Layout of all subdivision entrance street upgrades
- 25. Layout of all proposed alleys
- 26. Layout of all proposed sidewalk systems
- 27. Layout identifies any FEMA flood plain and flood way property within the 100-year flood elevation. (Provide Corp of Engineers 404 Permit if required)
- 28. Drainage easements for stormwater run-off and detention giving dimensions, locations, and purpose
- 29. Layout accommodates Master Street Plan segments within the boundaries
- 30. Street layout ties to existing adjoining subdivision stub-out streets and provides stub-out streets for

future adjoining subdivisions.

- 31. Street width and right-of-way properly shown for each functional classification
- 32. Street centerlines showing angles of deflection, intersection, radii, length oftangents and arcs, and degree of curvature with basis of curve data
- 33. Typical cross section of streets
- 34. Location and name of existing streets
- 35. New street names that are not similar to existing street names
- 36. Show street lights
- 37. Show Fire Hydrant placement
- 38. Show and label all permanent & proposed easements
- 39. Any proposed open space must be shown
- 40. Show the direction and flow of all water courses entering the tract
- 41. Show the direction and flow of all water courses leaving the tract
- 42. The drainage area of all water courses above the points of entry.
- 43. The downstream drainage channel and drainage structures substantially impacted by the subdivision/project.
- 44. Show source of water supply
- 45. Show location of waste water connection to municipal main & sanitary sewer layout
- 46. A phasing plan outlining the boundaries for each phase

II. ADDITIONAL INFORMATION NEEDED, BUT NOT NECESSARILY ON THE PLAT

- 47. Natural features within the proposed subdivision including drainage channels, bodies of water, wooded areas, and other significant features
- 48. Existing streets, buildings, water courses, railroads. Culverts, utilities and easement on and adjacent to the tract.
- 49. Where method of disposal of wastewater is other than connection to a public waste water system, detailed information shall accompany the plat.
- 50. Calculations and field notes, including drainage calculations along with support drawing
- 51. Stormwater detention plan approval from City Engineer (attach copy of approval)
- 52. The Certificate of Preliminary Engineering Accuracy on each set of street and drainage plans.
- 53. ADA Accessibility Standard Form completed (and attached)
- 54. A Bill of Assurance has been prepared for this subdivision (and attached)
- 55. All lots comply with minimum square footage area and minimum lot width at the front building line
- 56. Street pavement design will be as specified by City or AHTD design procedures, approved by the City Engineer.
- 57. Made the "One Call" prior to site clearance or other excavation activity

III. PRELIMINARY PLAT ATTACHMENTS

(APPLICATION WILL NOT BE ACCEPTED UNTIL ALL ATTACHMENT REQUIREMENTS ARE MET)

- 58. Letter to Planning Commission stating your request
- 59. Completed Checklist
- 60. Completed agreement to provide performance assurance
- 61. Subdivider Performance Bond or Cashier's Check for infrastructure installation
- 62. Landscaping plan of any proposed common open space
- 63. Draft of Bill of Assurance proposed for the subdivision (if applicable)
- 64. 20 copies of Preliminary Plat Plan (folded) that includes vicinity map (minimum size 17" X 34" paper)
- 65. Two (2) IBM compatible diskettes or CDR's with pertinent data and Plat in CAD compatible .DXF

- electronic file format
- 66. Copy of Stormwater Detention approval
- 67. 2 copies Plan and profile of all streets
- 68. Receipt for \$300.00 + \$3.00 per lot for preliminary Subdivision fee
- 69. Receipt for \$250.00 or \$25.00 per lot (whichever is greater) for Stormwater Detention and Drainage Plan review
- 70. Copy of ADEQ Stormwater Pollution Prevention Plan for property parcel containing one acre or larger.

III. FINAL PLAT ATTACHMENTS

(APPLICATION WILL NOT BE ACCEPTED UNTIL ALL ATTACHMENT REQUIREMENTS ARE MET)

- 71. Letter to Planning Commission stating your request
- 72. Completed Checklist
- 73. 20 copies of Final Plat Plan (folded) that includes vicinity map (minimum size 17" X 34" paper)
- 74. Two (2) IBM compatible diskettes or CDR's with pertinent data and Plat in CAD compatible .DXF electronic file format
- 75. Bill of Assurance including provisions set out in Title 15 Subdivision Regulations 15.16.01
- 76. Copy of Water & Sewer Commission approval or....
- 77. State Health Department approval of any new water supply and/or sewage system.
- 78. Letter submitted by a Registered Professional Engineer, certifying that all infrastructure improvements and installations have been installed in accordance with the submitted construction plans and drawings and the standards established by the City of Bryant and are functioning properly.
- 79. Infrastructure Maintenance Bond or Cashier's check.
- 80. Check for \$25.00 + \$1.00 per lot for final Subdivision fee
- 81. Check for Water Sewer impact fees (\$100.00 Flushing Fee and \$100.00 impact fee per lot)

HURRICANE GARDENS
Name of Subdivision

KERRY LANE
Surveyor

I HAVE COMPLIED WITH THE REQUIREMENTS LISTED ABOVE AND HAVE CHECKED ALL OF THE BOXES ON THE CHECKLIST WHICH APPLY TO THIS PROJECT SUBMITTAL.

David Brown
Owner Signature

Michael Bol
Engineer Signature

CITY USE

Preliminary Plat Approved _____ Planning Commission Meeting Date _____

Final Plat Approved _____ Planning Commission Meeting Date _____

Received Proof of Recording _____ By _____

**BILL OF ASSURANCE
HURRICANE GARDENS SUBDIVISION**

PART A. PREAMBLE

WHEREAS, Maples Development Company, LLC ("Owner") is the sole owner, by virtue of Instrument No. 2013-091658, of the following land situated in Saline County, Arkansas, to wit:

That portion of the SE 1/4 of the SE 1/4, Section 17, Township 1 South, Range 14 West, Saline County, Arkansas, described as follows: Commencing at the Southeast corner of said SE 1/4 SE 1/4, thence N 01° 53' 25" E, along the East line thereof a distance of 672.08 feet to the Point of Beginning; thence N 88° 57' 00" W, a distance of 1341.90 feet to the East line of Hurricane Lake Estates, Phase 3, an addition to the City of Benton, Saline County, Arkansas; thence N 01° 31' 28" E, along said East line a distance of 495.00 feet; thence S 88° 57' 15" E, a distance of 1345.06 feet to the East line of said SE 1/4 of SE 1/4; thence S 01° 53' 25" W, a distance of 495.14 feet to the Point of Beginning. Containing 15.27 acres, more or less. Subject to any easements that may exist.

WHEREAS, Owner has caused said land to be surveyed and a plat thereof made, dividing said land into lots as shown on said plat and showing the dimensions of each lot and the width of the streets as known as HURRICANE GARDENS SUBDIVISION (the "Subdivision"), a subdivision of the City of Bryant, Saline County, Arkansas, filed on or about the date hereof as Document _____; and

WHEREAS, the Saline County Real Estate Assessor and Office of Emergency Services have approved said Subdivision and road names.

NOW THEREFORE, Maples Development Company, LLC in consideration of the purposes herein stated, does hereby designate said land and make part hereof to be known as HURRICANE GARDENS SUBDIVISION, a subdivision of the City of Bryant, Saline County, Arkansas, and that hereafter any conveyance by the Owners of said land by lot number shall forever be held to be good and legal description.

PART B. DEDICATION

OWNER hereby dedicates to the public the use of the roadways depicted in the Subdivision Plat, and dedicates to the Property Owners Association ownership, and responsibility for maintenance, of the roadways designated on the above Plat as public roadways, as well as the detention basin depicted in the above-referenced Plat, and hereby dedicates to the City of Bryant an easement thereupon as shown in the above-referenced Plat in perpetuity, and all utility infrastructure and easements appurtenant to such utilities.

PART C: RESIDENTIAL AREA COVENANTS:

C-1 LAND USE AND BUILDING TYPE. No lot shall be used except for residential purposes. No business of any nature or kind shall at any time be conducted in any building located on any of the lots. No building shall be erected, altered, placed or admitted to remain on any lot other than one detached, site-built single-family dwelling not to exceed two stories in height,

excluding basement area. No lot can be subdivided for any purpose without the prior approval from the City of Bryant Planning and Zoning Commission.

C-2 ARCHITECTURAL CONTROL. No dwelling or structure shall be erected, placed or altered on any lot until the construction plans and specifications and a plan showing the location of the structure, including landscaping, have been approved by the architectural control committee as to quality of workmanship and materials, harmony of external design with existing structures, and as to location with respect to topography and finish grade elevation, and intended objectives of the Architectural Control Committee to achieve a subdivision that accomplishes the desired architectural design in the structure and subdivision ascetics.

C-3. DWELLING COST, QUALITY AND SIZE. No dwelling shall be permitted on any lot unless the dwelling has at least 1,800 square feet of heated space, exclusive of basements, porches, garages, patio and overhangs. It being the intention and purpose of the covenants to assure that all dwellings shall be of a quality of workmanship and materials, only brick or rock exterior surfaces will be allowed, except that (a) use of cedar or concrete; and (b) use of other materials on other surfaces than the front facades, may be approved by the Architectural Control Committee on a case-by-case basis where the procedures required herein are followed. Each dwelling shall have a minimum of a one car garage. No open carports are allowed. No prefabricated or modular homes shall be allowed.

C-4. BUILDING LOCATION. No lot shall be subdivided and no more than one dwelling shall be permitted on any one lot. No building shall be located on any lot, nearer to the side street line, than the minimum building set back lines as shown on the recorded plat. No building shall be located nearer than 8 feet to an interior lot line or nearer than 15 feet to the rear lot line as shown on the recorded Plat. For the purposes of this covenant, eaves and steps shall not be considered as part of the building.

C-5. EASEMENTS. Easements for installation and maintenance of utilities and drainage facilities, and construction, repair and maintenance of adequate walls, roofs and eaves are reserved as shown on recorded plat.

C-6. NUISANCES. No noxious or offensive activities shall be carried on, nor shall anything be done thereon which may be or become a nuisance to the neighborhood. There shall be no commercial business activity conducted on any Lot; provided however that the sale of Lots or dwellings and the construction of dwellings, buildings, structures and other improvements in the Subdivision shall not be prohibited by this Article and the same are hereby declared permitted commercial activities.

C-7. TEMPORARY STRUCTURES. No structure of a temporary character, basement, tent, shack, garage, barn or other out building shall be used on any tract at any time as a residence either temporarily or permanently; except that the developer may have a temporary construction and/or sales office.

C-8. OUT BUILDINGS. One outbuilding for storage shall be permitted, if approved by the Architectural Control Committee, which shall conform to the same architectural design and

construction of the dwelling. Above ground swimming pools are prohibited. No appurtenant structures shall be allowed unless specifically approved by the Architectural Control Committee, including any chain link fences, antennas, decks, basketball goals, swimming pools and television satellite dishes, which in no event shall be placed in front of dwellings.

C-9. SIGNS. No sign of any kind shall be displayed to the public view on any lot, except, one professional sign of not more than one square foot; one sign of not more than five square feet advertising the property for sale or rent or signs used by a builder to advertise the property during the construction and sales period. Developer may have an informational sign at entrance during sales and promotion period.

C-10. OWNER RESPONSIBILITY. Any property owner shall insure that any contractor performing services for the property owner shall comply with the provisions of this Bill of Assurance, and with all provisions of state and federal law, including obtaining such building permits and inspections as may be necessary or incidental to such construction.

C-11. CONTRACTOR RESPONSIBILITY. No contractor shall damage in any way the utilities or streets in any manner. Any damage by any contractor to the roadways, utilities, or other common elements shall be indemnified by the owner of that Lot for which such contractor was working at the time of damage.

C-12. OIL AND MINING OPERATIONS. No oil drilling, oil development operations, oil refining, quarrying or mining operations of any kind shall be permitted upon or in any lot, nor shall oil wells, tanks, tunnels, mineral excavations or shafts be permitted upon or in any lot. No derrick or structures designated for use in boring for oil or natural gas shall be erected, maintained or permitted upon any lot.

C-13. ANIMALS, LIVESTOCK AND POULTRY. No animals, livestock or poultry of any kind may be raised, bred or kept on any tract, except that dogs or cats may be kept, on any lot provided that they are not kept, bred, or maintained for any commercial purpose, with a strict limit of a total of three such allowed domestic mammals per Lot, and provided that they are leashed or fenced at all times (including by electronic fencing), and provided that facilities for maintenance of same are approved by the Architectural Control Committee, and furthermore that the keeping of same does not constitute a nuisance. The POA may disallow the presence of any animal which (a) bites another animal or person, or (b) is habitually (three or more times) unleashed or unfenced.

C-14. GARBAGE AND REFUSE DISPOSAL. No Lot or easement shall be used or maintained as a dumping ground for rubbish. Trash, garbage and other waste shall not be kept except in sanitary containers. All incinerators or other equipment for the storage or disposal of such materials shall be kept in a clean and sanitary condition, and not be permitted at any time at a location which is visible from the front of the lot.

C-15. SIGHT DISTANCE AT INTERSECTIONS. No fence, wall, hedge or shrub planting which obstructs sight lines at elevations between 2 and 6 feet above the roadways shall be placed or permitted to remain on any lot corner which the triangular area formed by the street property

lines and the line connecting them at points 15 feet from the intersection of street right of way lines, or in the case of a rounded property corner, from the intersection of the street property line extended. The same sight line limitations shall apply on any lot within 10 feet from the intersection of the street property line with the edge of a driveway pavement. No tree shall be permitted to remain within such distances or such intersections unless the foliage line is maintained at sufficient height to prevent obstruction of such sight lines.

C-16. BUILDERS. All building must be performed by competent builders licensed by the State of Arkansas. Lot owners shall submit the name and qualifications of the builder selected to construct a dwelling, who must be approved in writing by the Architectural Control Committee at the time of submission of building plans. The Architectural Control Committee reserves the right to submit for approval the name of any contractor selected by a property owner to an architect of the choosing of the Architectural Control Committee.

C-17. LOT, YARD AND HOME MAINTENANCE. All property owners, after acquisition of any lot, shall keep all grounds and yards mowed, trimmed and clean. All grass is to be kept mowed no higher than four inches, and leaves shall be regularly removed by each owner to avoid accumulation thereof. No deviation from the original plans shall be permitted without approval of the Architectural Control Committee. No fence or wall shall be erected, placed or altered on any lot nearer than the building set back line shows on the Plat.

C-18. COMMENCEMENT OF CONSTRUCTION. A property owner must start construction of an approved dwelling within a period of one (1) year from date of purchase. The developer reserves the option to repurchase any lot for the amount of the original purchase price if construction is not commenced within such period of time. This option shall be exercised in writing within a period of thirty (30) days after the one (1) year period.

C-19. COMPLETION OF CONSTRUCTION. Any dwelling must be completed in its entirety within a period of one year from date such construction is commenced.

C-20. MOTOR VEHICLE PARKING. Abandoned or unused motor vehicles shall not be parked or permitted to remain on any lot or within the dedicated street. Boats, recreational vehicles and trailers cannot be parked at front or side of any dwelling or in the dedicated street and must be parked in back of the dwelling. Owners or permanent residents are prohibited from parking in the street.

C-21. MINIMUM FLOOR LEVEL ELEVATIONS. The Architectural Control Committee reserves the right to prescribe the minimum floor elevations for lots.

C-22. FULLY PROTECTED RESIDENTIAL AREA. The residential area covenants in this Part C in their entirety shall apply to the entire Hurricane Gardens Subdivision.

PART D. ARCHITECTURAL CONTROL COMMITTEE:

D-1 MEMBERSHIP. The Architectural Control Committee shall be composed of David Chapman, Dennis Milligan and Deanna Chapman, unless and until the enforcement of this Bill

of Assurance generally is assumed by the POA pursuant hereto. A majority of the committee may designate a representative to act for it. In the event of death or resignation of any member of the committee, the remaining members shall have full authority to designate a successor. Neither the members of the committee nor its designated representative shall be entitled to any compensation for these services performed pursuant to this covenant.

D-2. PROCEDURE. The committee's approval or disapproval as required in these covenants shall be in writing. In the event the committee or its designated representative fails to approve or disapprove within 30 days after plans and specification have been submitted to it or in the event no suit to enjoin the construction or compliance with these covenants has been commenced within 180 days after the completion thereof will not be required and the related covenants shall be deemed to have been fully complied with. The Committee will with Buyer's permission and at the expense of the Buyer refer Buyer's plan to an architect for revisions and changes to comply with the Bill of Assurance.

D-3 REQUIREMENTS BEFORE CONSTRUCTION. No dwelling, building, structure or other improvements, including a manufactured home or a mobile home, shall be erected, placed, altered, re-erected or permitted to remain on or upon any Lot platted hereby until the building plans, specifications, exterior color schemes, general plan of landscaping and plot plan showing the location and facing of such dwelling, building, structure or other plot plan showing the location and facing of such dwelling, building, structure or other improvement with respect to existing topography, adjoining streets, and finished ground elevations have been approved in writing by the Committee. Prior to commencement of any proposed construction of a dwelling, structure or other improvement upon any Lot or part of any Lot located within the Subdivision, the Owner of the Lot shall submit to the Committee, the following documentation with respect to any proposed construction:

- (i) Plot Plan.
- (ii) Description of the dimensions of the proposed dwelling, building, structure or other improvement.
- (iii) Specifications reflecting the choice of exterior building materials and color scheme or photographs of the proposed dwelling, building, structure, and improvement.
- (iv) Such other documentation as the Architectural Control Committee may request.

For purposes hereof, the "proposed construction" shall include, but shall not be limited to, new construction or reconstruction of a dwelling, building, structure or other improvement on a Lot

D-4 TURNOVER OF RESPONSIBILITY OF COMMITTEE TO PROPERTY OWNERS ASSOCIATION. The Property Owners Association described in Part E shall assume all responsibilities of the Architectural Control Committee as set out herein on the earlier of (a) the

sale by Owner of ninety percent (90%) of the Lots within the Hurricane Gardens Subdivision; or (b) January 1, 2020. Owner may cause the POA to be activated at an earlier date and by signed writing delegate enforcement hereof thereto in its sole discretion.

PART E. PROPERTY OWNERS ASSOCIATION

The Owners hereby establishes the Hurricane Gardens Property Owner's Association (the "Association" or the "POA") for the purpose of maintaining and ownership of the common area and appurtenances belonging thereto as shown on the above-referenced Plat. The use of the land in said Subdivision being subject to the following Protective and Restrictive Covenants:

E-1 OWNERS' EASEMENTS OF ENJOYMENT. Every owner shall have a right and easement of enjoyment in common area which shall be appurtenant to and shall pass with the title to every tract, subject to the right of the Association to charge reasonable fees for maintenance of the common area.

E-2. MEMBERSHIP AND VOTING RIGHTS

SECTION 1: Every owner of a tract which is subject of assessment shall be a member of the Association. Membership shall be appurtenant to and may not be separated from ownership of any tract which is subject to assessment.

SECTION 2: The Association shall have two classes of voting membership:

Class A: Class A members shall be all owners, with the exception of the Owner, and shall be entitled to one vote for each tract owned, which may be voted at such time as all tracts are sold by the Owner. When more than one person holds an interest in any tract, all such persons shall be members. The vote for such tract shall be exercised as they determine, but in no event shall more than one vote be cast with respect to any Tract.

Class B: The Class B member(s) shall be the Owner and shall be entitled to two votes per tract owned. The Class B membership shall cease on the happening of either of the following events, whichever occurs earlier, (a) when all tracts are sold by Owner, or (b) on January 1, 2020.

SECTION 3: The POA Board shall consist of three owners of Lots within the Subdivision, each for three year staggered terms. The POA shall elect so many Directors as there are vacancies at any annual meeting or special meeting called for that purpose. The initial Directors shall be the then-acting members of the Architectural Control Committee.

E-3. COVENANT FOR MAINTENANCE ASSESSMENTS

SECTION 1: Creation of the Lien and Personal Obligation of Assessments: The Owner, for each tract owned within the properties, hereby covenants, and each owner of any tract by acceptance of a deed therefore, whether or not it shall be so expressed in such deed, is deemed to covenant and agree to pay to the Association annual assessment or charges ("POA Dues"),

such assessments to be established and collected as hereinafter provided. The annual POA Dues, together with interest, costs and reasonable attorney's fees, shall be a charge on the land and shall be a charge on the land and shall be a continuing lien upon the property against which each such assessment is made. Each such assessment, together with interest, costs, and reasonable attorneys fees, shall also be the personal obligation of the person who is the owner of such property at the time when the assessment fell due. The personal obligation for delinquent assessments shall not pass to his successors in title unless expressly assumed by them.

SECTION 2: Purpose of Assessment: The POA Dues levied by the Association shall be used as follows:

- (a) For the maintenance and upkeep of all Roadways within the Subdivision, stormwater detention basin, green spaces, and all other common elements and common areas at all times;
- (b) Enforcement of the financial and non-financial covenants contained herein; and
- (b) For any lawful purposes deemed in the best interest of the property owners by the Association.

SECTION 3: Annual Assessment: Each property owner shall be assessed an annual dues of \$80.00 per lot effective January 1, 2019, and annually thereafter. The fees may be adjusted effective January 1, 2020 and on each year thereafter, except that it shall require a two-thirds vote of the owners of all of the Lots to increase same by more than five percent (5%) in any given year. The sole intent and purpose of these fees are for operation, maintenance, improvements and other amenities in a manner determined by the association membership as expressed by its Board in accord with the provisions of immediately preceding Section E-2.

SECTION 4: Notice and Quorum for Any Action Authorized under Section 3: POA meetings shall be held within ten miles of the Subdivision. Written Notice of any meeting called for the purpose of taking any action authorized under Section 3 shall be sent to all members not less than 30 days or more than 60 days in advance of the meeting. At the first such meeting called, the presence of member or proxies entitled to cast 60% of all votes of each class of membership shall constitute a quorum. If the required quorum is not present, another meeting may be called subject to the same notice requirement, and the required quorum at the preceding meeting shall be one-half (1/2) of the required quorum at the preceding meeting. No such subsequent meeting shall be held more than 60 days following the preceding meeting. Each Lot as conveyed by Owner shall have one vote.

SECTION 5: Uniform Rate of Assessment: Both annual and special assessments must be fixed at a uniform rate and may be collect on a semi-annual or annual basis.

SECTION 6: Date of Commencement of Annual Assessments: Due Dates: The annual assessments provided for herein shall commence as to all tract sold by Owner on the first day of January, 2019. The members shall fix the amount of the annual assessment against each tract at least thirty (30) days in advance of each annual assessment period, subject to the above

limitations. Written notice of the annual assessment shall be sent to every owner subject thereto. The due dates shall be established by the Board of Directors. The Association shall, upon demand, and for a reasonable charge, furnish a certificate signed by an officer of the Association setting forth whether the assessments on a specified tract have been paid. A properly executed certificate of the Association as to the status of assessments is binding upon the Association as of the date of its issuance.

SECTION 7: Effect of Nonpayment of Assessments: Remedies of the Association: Any assessment not paid within (30) days after the due date shall bear interest from the due date at the rate of ten percent per annum. The Association may bring an action at law against the owner personally obligated to pay the same, or foreclose the lien against the property. No owner may waive or otherwise escape liability for the assessments provided for herein by non-use of the common area or abandonment of the property.

SECTION 8: Subordination of the Lien to Mortgages: The lien of the assessments provided for herein shall be subordinate to the lien of any first mortgage. Sale or transfer of any tract shall not affect the assessment lien. However, the sale or transfer of any tract pursuant to mortgage foreclosure or any proceeding in lieu thereof shall extinguish the lien of such assessments as to payments which became due prior to such sale or transfer. No sale or transfer shall relieve such tract from liability for any assessments thereafter becoming due or from the lien thereon.

PART F. ENFORCEMENT

F-1. FINANCIAL COVENANTS: All financial covenants, including the obligation to pay POA Dues, and following the failure of the owner of a Lot to reimburse the POA for any actions taken to cure a nonfinancial violation hereof following notice to cure, following written notice of delinquency and thirty days in which to cure, the POA may impose a lien against those Lots owned by the owner failing to pay same, which shall be subordinate to all prior purchase money or other consensual secured indebtedness, modifications and extensions thereof. The POA may take all actions available at law, including proceedings at law or in equity against any person or persons violating or attempting to violate any covenant either to restrain violations or to recover damages.

F-2. NONFINANCIAL COVENANTS: All nonfinancial covenants may be enforced by the POA or by any resident of the Subdivision by any actions available at law, including proceedings at law or in equity against any person or persons violating or attempting to violate any covenant either to restrain violations or to recover damages, but only following written notice of such violation and thirty days in which to cure. If not cured in that period, then the POA, upon affirmative vote of the Board (but not any individual owner), may elect to cure that offensive or violative condition on any Lot, and the owner of that Lot shall reimburse the POA for such expenses within thirty (30) days of presentment of an invoice for same.

F-3. COSTS AND FEES OF FORCED COMPLIANCE: In addition to the base liabilities arising from violations described in Articles F-1 and F-2, upon material breach hereof, the POA shall be entitled to all reasonable attorney's fees and costs incurred in enforcing its rights set out

herein, and any Owner who is successful in any action described in F-2 shall likewise be entitled to all reasonable attorney's fees and costs incurred in enforcing the rights set out herein.

F-4. INDEMNITY. Each Owner, by acceptance of a deed to his or her Parcel, shall and does hereby indemnify, defend and agree to hold the Owner, the Architectural Review Board, and the Association and their respective agents, employees, officers, directors, shareholders, members, managers, and representatives harmless from and against any and all other amounts suffered, paid, or incurred by any of them in connection with any action, suit, or proceeding (including the settlement of any suit or proceeding) to which any such person may be made a part by reason of the breach by such Owner (or, any breach by such owner's occupants, contractors, subcontractors, guest, agents, employees, or invitees) of any of the terms and provisions of this Section F.

PART G. GENERAL PROVISIONS:

G-1. TERM. These covenants are to run with the land and shall be binding on all parties and all persons claiming under them for a period of twenty-five years from the date these covenants are recorded after which time, said covenants shall be automatically extended for successive period of ten years, subject to the express provision that these covenants may be amended at any time after the date of execution hereby by an instrument signed by the members of the Architectural Control Committee and the owner or owners of a majority of the lots herein platted.

G-2. SEVERABILITY. Invalidation of any one of these covenants by judgment or court order shall in no way affect any of the other provisions which shall remain in full force and effect.

G-3. AMENDMENT. This Bill of Assurance may be amended only by the affirmative agreement of ninety percent (90%) of the Membership as defined in Article E-2 above.

IN WITNESS WHEREOF, the name of Owner is hereby affixed by its members this 31 day of October, 2017.

[Signature Page Follows]

MAPLES DEVELOPMENT CO., LLC



BY: _____
David Chapman, Member

ACKNOWLEDGEMENT

STATE OF ARKANSAS)
)ss
COUNTY OF SALINE)

On this day appeared before me, a Notary Public, David Chapman, known to me as a member of Maples Development Co., LLC and acknowledged that he was authorized to execute the foregoing on its behalf and that they had executed same for the consideration and purpose therein mentioned and set forth.

WITNESS my hand and seal this 31 day of October, 2017.



Notary Public
My commission expires: 4427





Arkansas Department of Health

4815 West Markham Street • Little Rock, Arkansas 72205-3867 • Telephone (501) 661-2000

Governor Asa Hutchinson

Nathaniel Smith, MD, MPH, Director and State Health Officer

Engineering Section, Slot 37
www.healthy.arkansas.gov

Ph 501-661-2623

Fax 501-661-2032

After Hours Emergency 501-661-2136

July 14, 2016

Michael Bolin PE
Michael Bolin & Associates, Inc.
PO Box 605
Benton, Arkansas 72018-0605

RE: Hurricane Gardens (56 Lots) – Water and Sewer Extension
Bryant, Saline County
ADH Project No. 96375

Dear Mr. Bolin:

The plans for the above-captioned project dated 7-7-16, and submitted to the Engineering Section on 7-8-16, have been reviewed and are hereby approved with the following conditions:

1. The Engineering Section relied upon the statements and representations made in the engineer's report, plans and specifications. In case any statement or representation in the aforementioned documents is found to be incorrect, this Approval may be revoked.
2. There shall be no deviation from the plans and specifications unless revised plans and specifications have been first submitted for review and written consent given.
3. The review and approval of the plans and specifications were for functional and sanitary features and in no way constitute an analysis of the structural design.
4. If construction on this project is not started within one year of the date affixed hereto, this Letter of Approval is void.
5. Construction shall be performed according to the Salem Water and Bryant wastewater standard specifications and details.
6. Construction inspection for this project shall be the responsibility of Michael Bolin PE.
7. All materials and components installed after January 3, 2014 in drinking water systems are required to comply with the federal definition of "lead free" contained in Public Law 111-380.

One set of the plans is being retained for our files. When submitting correspondence pertaining to this project, please include our reference number 96375.

Sincerely,

Robert D. Arthur, P.E.
Engineer Supervisor
Engineering Section

RDA: SGB: sgb

cc: Salem Water Association (PWS 492)
Bryant Wastewater (PSS S078)
Saline County Sanitarian
Protective Health Codes

MICHAEL BOLIN & ASSOCIATES, INC.

CONSULTING ENGINEERS
P. O. Box 605
BENTON, AR 72018-0605

October 12, 2017

To Whom It May Concern:

Re: Bryant, Arkansas
Hurricane Gardens
Infrastructure Construction

Gentlemen:

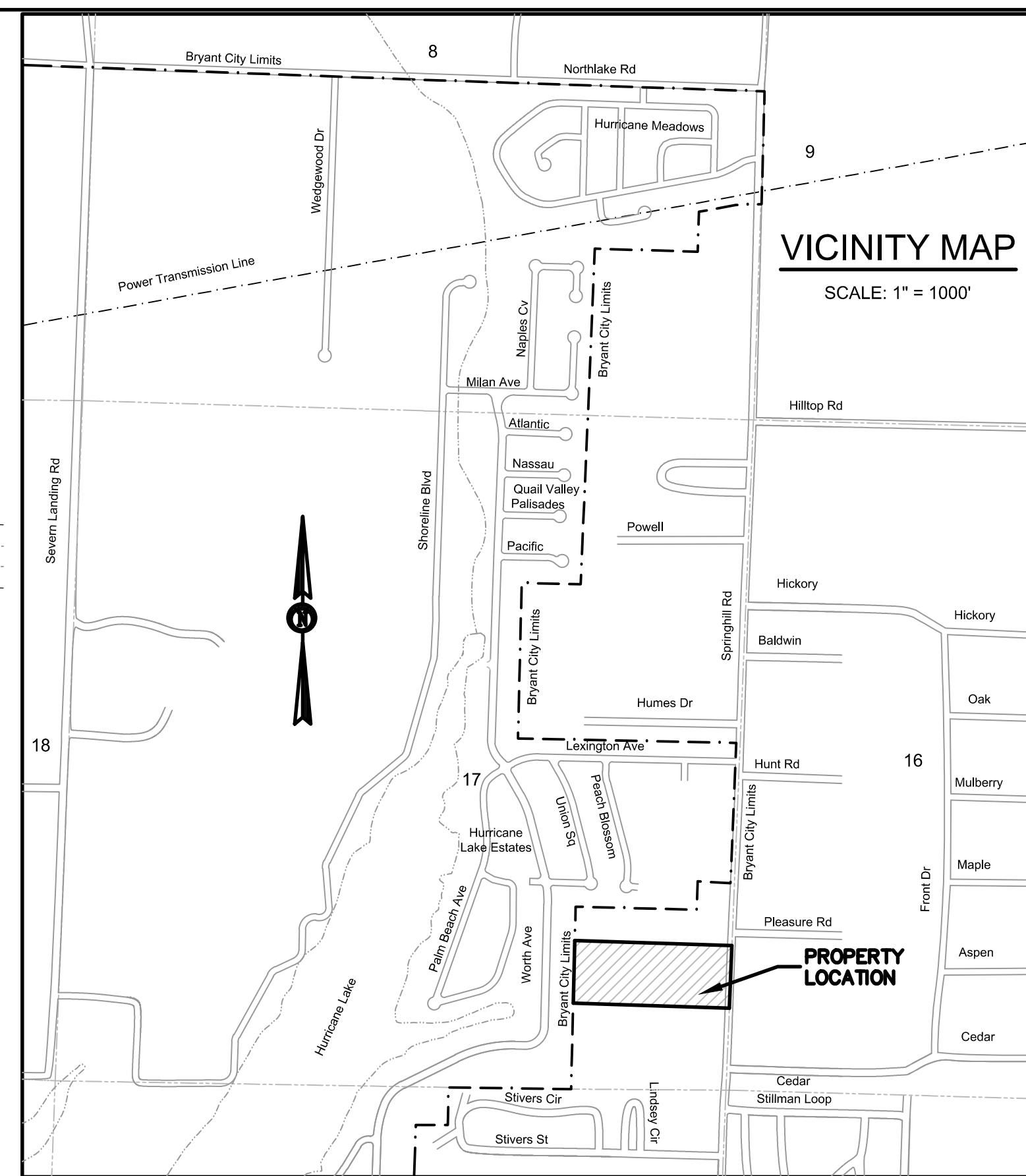
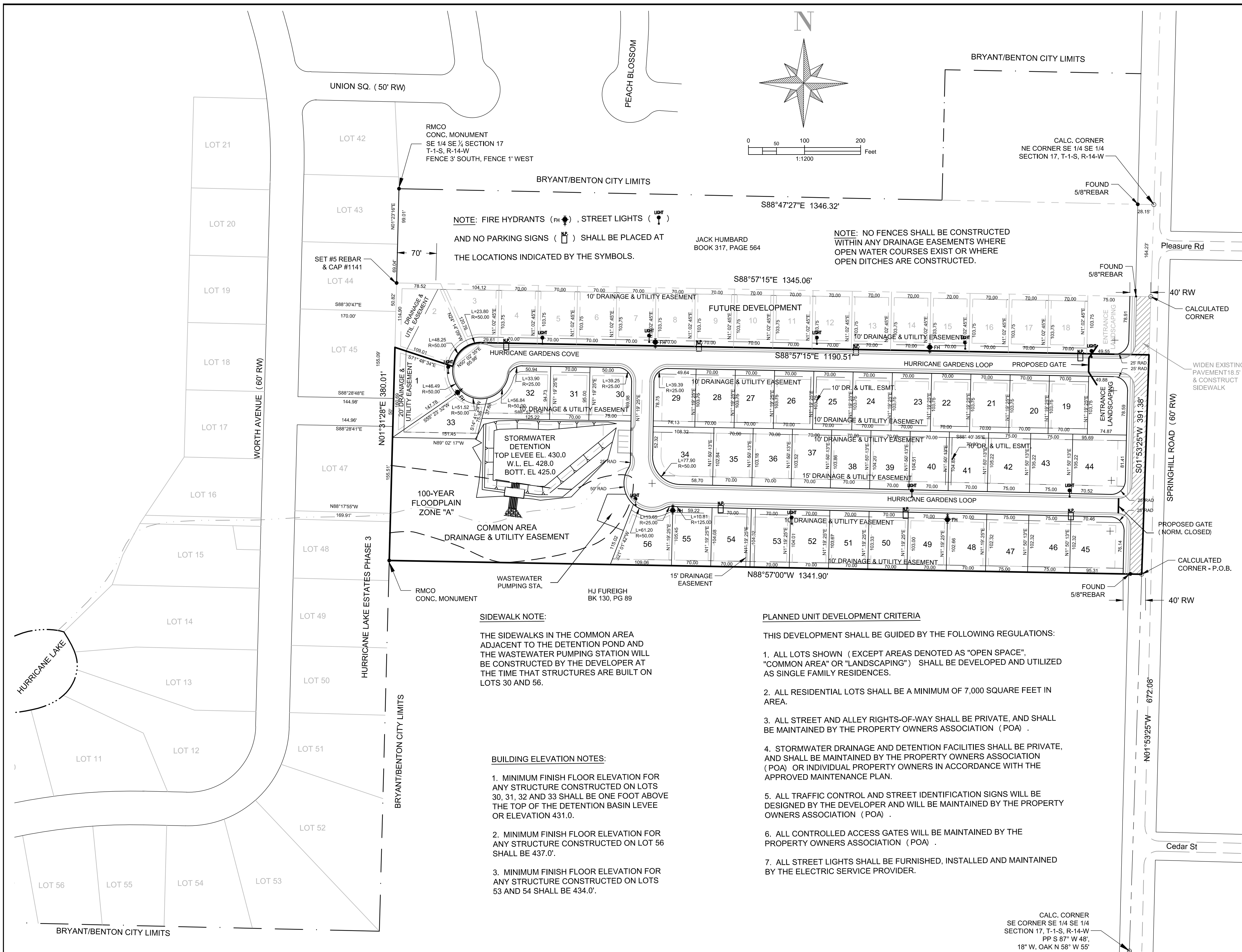
This is to certify that all infrastructure improvements and installations have been installed in accordance with the submitted construction plans and drawings, and the standards established by the city of Bryant, and are functioning properly.

Sincerely,

MICHAEL BOLIN & ASSOCIATES, INC.



Michael Bolin, P.E.
President
Arkansas Reg. Prof. Engr. No. 4197

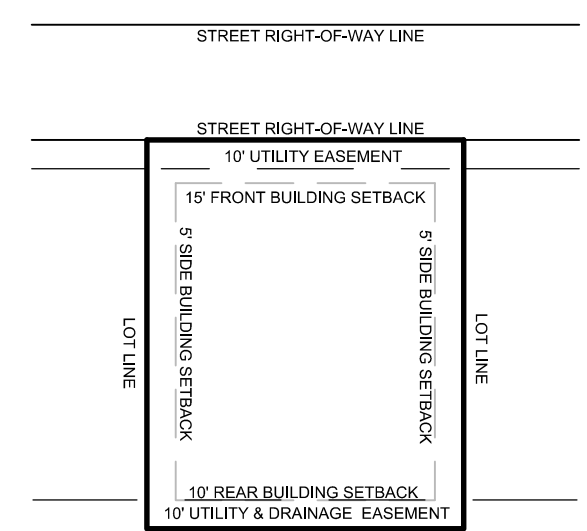


LEGAL DESCRIPTION

That portion of the Southeast 1/4 of the Southeast 1/4, Section 17, Township 1 South, Range 14 West, Saline County, Arkansas, described as follows: Commencing at the Southeast corner of said SE 1/4 SE 1/4, thence N 01° 53' 25" E, along the East line thereof a distance of 672.08 feet to the Point of Beginning; thence N 88° 57' 00" W, a distance of 1341.90 feet to the East line of Hurricane Lake Estates, Phase 3, an addition to the City of Benton, Saline County, Arkansas; thence N 01° 51' 28" E, along said East line a distance of 380.01 feet, thence S 71° 38' 04" E, a distance of 109.016 feet; thence along a curve to the right having a radius of 50.00 feet and a curve length of 72.05 feet and a chord bearing and distance N 50° 02' 34" E, 65.98 feet; thence S 88° 57' 15" E, a distance of 1190.51 feet to the East line of said SE 1/4 of SE 1/4, thence S 01° 53' 25" W, a distance of 391.38 feet to the Point of Beginning. Containing 11.99 acres, more or less. Subject to any easements that may exist.

SURVEY NOTES:

1. BASIS OF BEARING IS "GEODETTIC" ACCORDING TO DATA FROM PLAT OF HURRICANE LAKE ESTATES, PHASE 3, AN ADDITION TO THE CITY OF BENTON, SALINE CO., AR.
2. CALC SE CORNER SEC 17, T-1-S, R-14-W, POSITION REPRODUCED FROM DATA & MONUMENTS USED IN CEDAR POINT SUBDIVISION, CITY OF BRYANT, AR.
3. CALC NE CORNER NE 1/4 SE 1/4, SEC 17, T-1-S, R-14-W, POSITION REPRODUCED FROM DATA & MONUMENTS USED IN HURRICANE LAKE ESTATES, PH 4, AN ADDITION TO THE CITY OF BENTON, SALINE CO., CAP. PS#1284 N88°29'53"W 46.28'; CAP. PS#1284 S23°26'33"W 124.35'.



TYPICAL LOT SETBACKS & EASEMENTS

PLANNED UNIT DEVELOPMENT CRITERIA

THIS DEVELOPMENT SHALL BE GUIDED BY THE FOLLOWING REGULATIONS:

1. ALL LOTS SHOWN (EXCEPT AREAS DENOTED AS "OPEN SPACE", "COMMON AREA" OR "LANDSCAPING") SHALL BE DEVELOPED AND UTILIZED AS SINGLE FAMILY RESIDENCES.
2. ALL RESIDENTIAL LOTS SHALL BE A MINIMUM OF 7,000 SQUARE FEET IN AREA.
3. ALL STREET AND ALLEY RIGHTS-OF-WAY SHALL BE PRIVATE, AND SHALL BE MAINTAINED BY THE PROPERTY OWNERS ASSOCIATION (POA).
4. STORMWATER DRAINAGE AND DETENTION FACILITIES SHALL BE PRIVATE, AND SHALL BE MAINTAINED BY THE PROPERTY OWNERS ASSOCIATION (POA) OR INDIVIDUAL PROPERTY OWNERS IN ACCORDANCE WITH THE APPROVED MAINTENANCE PLAN.
5. ALL TRAFFIC CONTROL AND STREET IDENTIFICATION SIGNS WILL BE DESIGNED BY THE DEVELOPER AND WILL BE MAINTAINED BY THE PROPERTY OWNERS ASSOCIATION (POA).
6. ALL CONTROLLED ACCESS GATES WILL BE MAINTAINED BY THE PROPERTY OWNERS ASSOCIATION (POA).
7. ALL STREET LIGHTS SHALL BE FURNISHED, INSTALLED AND MAINTAINED BY THE ELECTRIC SERVICE PROVIDER.

SIDEWALK NOTES:

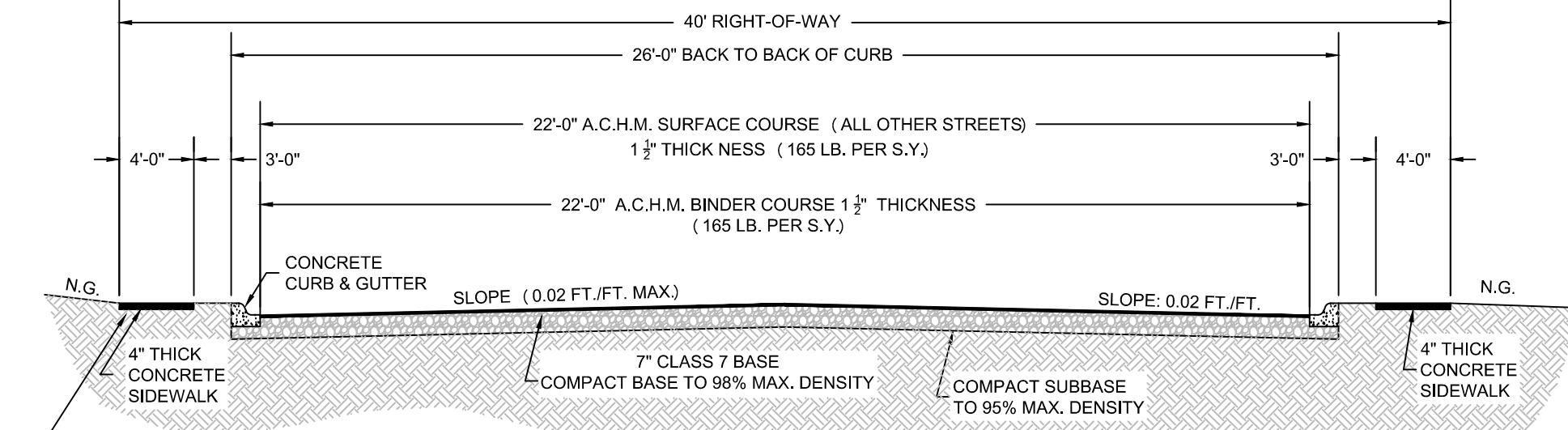
THE SIDEWALKS IN THE COMMON AREA ADJACENT TO THE DETENTION POND AND THE WASTEWATER PUMPING STATION WILL BE CONSTRUCTED BY THE DEVELOPER AT THE TIME THAT STRUCTURES ARE BUILT ON LOTS 30 AND 56.

BUILDING ELEVATION NOTES:

1. MINIMUM FINISH FLOOR ELEVATION FOR ANY STRUCTURE CONSTRUCTED ON LOTS 30, 31, 32 AND 33 SHALL BE ONE FOOT ABOVE THE TOP OF THE DETENTION BASIN LEVEE OR ELEVATION 431.0.
2. MINIMUM FINISH FLOOR ELEVATION FOR ANY STRUCTURE CONSTRUCTED ON LOT 56 SHALL BE 437.0'.
3. MINIMUM FINISH FLOOR ELEVATION FOR ANY STRUCTURE CONSTRUCTED ON LOTS 53 AND 54 SHALL BE 434.0'.

SIDEWALK NOTES:

1. ALL SIDEWALKS SHALL BE REINFORCED WITH WOVEN WIRE FABRIC REINFORCEMENT.
2. CONTRACTION JOINTS SHALL BE CONSTRUCTED PERPENDICULAR TO THE SIDEWALK AT 4'-0" INTERVALS.
3. EXPANSION JOINTS SHALL BE CONSTRUCTED PERPENDICULAR TO THE SIDEWALK AT 20'-0" INTERVALS, & AT DRIVEWAYS, DROP INLETS AND CURBS. JOINTS SHALL BE MADE WITH 1/2" NON-EXTRUDING PRE-FORMED EXPANSION JOINT FILLER.
4. SIDEWALKS SHALL COMPLY WITH ALL ADA REQUIREMENTS, AND SHALL HAVE A MAXIMUM TRANSVERSE SLOPE OF 2%.



TYPICAL STREET & SIDEWALK SECTION

CERTIFICATE OF SURVEYING ACCURACY

I, Kerry D. Lane, hereby certify that this plat correctly represents a boundary survey made by me or under my supervision; that all monuments shown hereon actually exist and their location, size, type, and material are correctly shown; and that all interior lot lines have been adjusted to "as built conditions" and are accurately described on the plat and identified on the ground in terms of length and direction of the property sides as required in accordance with the city of Bryant Subdivision Rules and Regulations.

Professional Land Surveyor, #1141, Arkansas.

CERTIFICATE OF ENGINEERING ACCURACY

I, C. Michael Bolin, hereby certify that the construction plans prepared for the development depicted by this plat, have been designed in accordance with the subdivision regulations, city standards and requirements, and applicable local, state and federal laws, and that the water, sewer, and stormwater systems are adequate to support this development.

By: _____ Date: _____
Arkansas Professional Engineer License # 4197

CERTIFICATE OF FINAL PLAT APPROVAL

Pursuant to the City of Bryant Subdivision Rules and Regulations, this document was given approval by the Bryant Planning Commission at a meeting held on _____, 20____. All of the document is hereby accepted, and this certificate executed under the authority of said rules and regulations.

Date of Execution _____ Name _____
Bryant Planning Commission

OWNER & SUBDIVIDER: Maples Development Co., LLC, P.O. Box 1065, Bryant, Arkansas 72089

CERTIFICATE OF OWNER
We, the undersigned, owners of the real estate shown and described herein do hereby certify that we have laid off, platted and subdivided, and do hereby lay off, plat and subdivide said real estate in accordance with the within plat.

Date of Execution _____ Name _____
Signature _____
P.O. Box 1065, Bryant, AR 72089
Address _____

CURRENT ZONING: PUD

CERTIFICATE OF RECORDING
This document, number _____, filed for record _____, 20____

in Plat Book _____ Page _____
Name(Clerk) _____

DEDICATION OF EASEMENTS
Easements for the installation and maintenance of utility lines are hereby reserved across the front ten feet and the rear ten feet of each lot, and as otherwise shown on plat.

LOCATION OF BUILDING LINES
Structures must be set back a minimum of 15 feet from the front property lines, a minimum of 5 feet from the interior side lot lines (15 feet from a side lot line that is facing a street), and a minimum of 10 feet from the rear property lines.

MICHAEL BOLIN & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 605, BENTON, AR 72018, (501) 776-2692
FAX (501) 776-2619 EMAIL: cmbolin@sbcglobal.net

BRYANT, ARKANSAS
FINAL PLAT
HURRICANE GARDENS - PHASE 1



AS-BUILT DATE: SEPTEMBER 2017

CONTACT PERSON: M. BOLIN

SCALE: 1" = 100'

DATE: OCTOBER 2017

FINAL PLAT PHASE 1

JOB NO. 178-ABC SHEET NO. 1 OF 1

DATE: 1-09-2014
500-01S-14W-0-17-220-62-1141
REAL ESTATE SERVICES OF SALINE CO. INC.
1200 FERGUSON DR, SUITE 5, BENTON, ARKANSAS 72015 501-315-8866